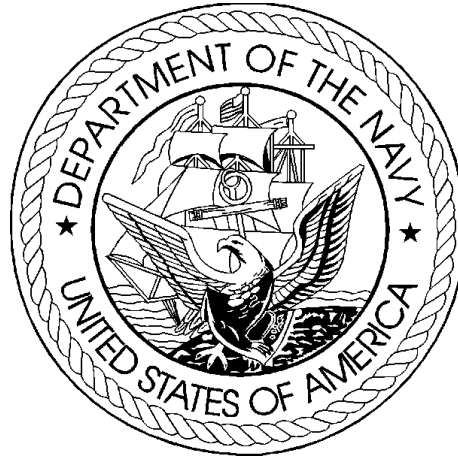


DEPARTMENT OF THE NAVY
FISCAL YEAR (FY) 2002
AMENDED BUDGET SUBMISSION



JUSTIFICATION OF ESTIMATES
JUNE 2001

RESEARCH, DEVELOPMENT, TEST &
EVALUATION, NAVY
BUDGET ACTIVITY 5

UNCLASSIFIED
DEPARTMENT OF DEFENSE
FY 2002 RDT&E PROGRAM

SUMMARY
(\$ IN THOUSANDS)

JUNE 2001

APPROPRIATION -----	FY 2000 -----	FY 2001 -----	FY 2002 -----
Research, Development, Test & Eval, Navy	9,064,511	9,458,007	11,123,389
Total Research, Development, Test & Evaluation	9,064,511	9,458,007	11,123,389

UNCLASSIFIED
DEPARTMENT OF DEFENSE
FY 2002 RDT&E PROGRAM

SUMMARY
(\$ IN THOUSANDS)

JUNE 2001

Summary Recap of Budget Activities -----	FY 2000 -----	FY 2001 -----	FY 2002 -----
Basic Research	367,129	393,835	406,120
Applied Research	610,404	659,154	626,550
Advanced Technology Development	739,492	786,425	680,500
Demonstration and Validation	2,353,009	2,557,636	2,414,880
Engineering and Manufacturing Development	2,225,926	2,214,621	4,122,698
RDT&E Management Support	810,339	651,178	738,841
Operational Systems Development	1,958,212	2,195,158	2,133,800
Total Research, Development, Test & Evaluation	9,064,511	9,458,007	11,123,389
 Summary Recap of FYDP Programs -----			
Strategic Forces	92,729	84,953	82,614
General Purpose Forces	964,735	885,771	829,774
Intelligence and Communications	736,160	867,632	824,611
Guard and Reserve Forces		5,863	13,082
Research and Development	7,129,776	7,495,719	9,269,069
Central Supply and Maintenance	132,808	118,069	104,239
Administration and Associated Activities	8,303		
Total Research, Development, Test & Evaluation	9,064,511	9,458,007	11,123,389

UNCLASSIFIED

DEPARTMENT OF THE NAVY

FY 2002 RDT&E PROGRAM

SUMMARY
(\$ IN THOUSANDS)

JUNE 2001

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
1	0601152N	In-House Laboratory Independent Research	1	15,262	16,193	16,291	U
2	0601153N	Defense Research Sciences	1	351,867	377,642	389,829	U
		Basic Research		367,129	393,835	406,120	
3	0602111N	Air and Surface Launched Weapons Technology	2	54,629	54,957		U
4	0602114N	Power Projection Applied Research	2			66,322	U
5	0602121N	Ship, Submarine & Logistics Technology	2	60,710	56,291		U
6	0602122N	Aircraft Technology	2	21,759	20,864		U
7	0602123N	Force Protection Applied Research	2			117,072	U
8	0602131M	Marine Corps Landing Force Technology	2	17,233	12,180	31,248	U
9	0602232N	Communications, Command and Control, Intelligence, Surveillance	2	83,113	113,851		U
10	0602233N	Human Systems Technology	2	33,717	40,068		U
11	0602234N	Materials, Electronics and Computer Technology	2	101,725	102,377		U
12	0602235N	Common Picture Applied Research	2			83,557	U
13	0602236N	Warfighter Sustainment Applied Research	2			71,294	U
14	0602270N	Electronic Warfare Technology	2	34,412	25,804		U
15	0602271N	RF Systems Applied Research	2			62,141	U
16	0602314N	Undersea Warfare Surveillance Technology	2	47,540	52,898		U
17	0602315N	Mine Countermeasures, Mining and Special Warfare	2	44,159	50,397		U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
18	0602435N	Ocean Warfighting Environment Applied Research	2	66,642	76,363	50,738	U
19	0602633N	Undersea Warfare Weaponry Technology	2	37,127	40,652		U
20	0602747N	Undersea Warfare Applied Research	2			76,510	U
21	0602782N	Mine and Expeditionary Warfare Applied Research	2			57,668	U
22	0602805N	Dual Use Science and Technology Program	2	7,638	12,452	10,000	U
		Applied Research		----- 610,404	----- 659,154	----- 626,550	
23	0603114N	Power Projection Advanced Technology	3			76,410	U
24	0603123N	Force Protection Advanced Technology	3			85,297	U
25	0603217N	Air Systems and Weapons Advanced Technology	3	47,825	60,592		U
26	0603235N	Common Picture Advanced Technology	3			48,583	U
27	0603236N	Warfighter Sustainment Advanced Technology	3			57,685	U
28	0603238N	Precision Strike and Air Defense Technology	3	84,946	86,752		U
29	0603270N	Advanced Electronic Warfare Technology	3	20,361	17,361		U
30	0603271N	RF Systems Advanced Technology	3			76,876	U
31	0603508N	Surface Ship & Submarine HM&E Advanced Technology	3	78,230	72,758		U
32	0603640M	Marine Corps Advanced Technology Demonstration (ATD)	3	66,432	60,687	51,310	U
33	0603706N	Medical Development	3	73,821	84,823		U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
34	0603707N	Manpower, Personnel and Training Adv Tech Dev	3	38,370	45,566		U
35	0603712N	Environmental Quality and Logistics Advanced Technology	3	24,682	48,129		U
36	0603727N	Navy Technical Information Presentation System	3	42,300	51,033	118,802	U
37	0603729N	Warfighter Protection Advanced Technology	3			17,678	U
38	0603747N	Undersea Warfare Advanced Technology	3	56,535	66,182	56,303	U
39	0603758N	Navy Warfighting Experiments and Demonstrations	3			43,277	U
40	0603782N	Mine and Expeditionary Warfare Advanced Technology	3	57,077	48,172	48,279	U
41	0603792N	Advanced Technology Transition	3	106,018	99,116		U
42	0603794N	C3 Advanced Technology	3	42,895	45,254		U
	Advanced Technology Development			739,492	786,425	680,500	
43	0603207N	Air/Ocean Tactical Applications	4	28,441	32,536	32,332	U
44	0603216N	Aviation Survivability	4	13,622	7,458	25,572	U
45	0603237N	Stall/Spin Inhibitors (H)	4			50,000	U
46	0603254N	ASW Systems Development	4	19,657	27,409	12,922	U
47	0603261N	Tactical Airborne Reconnaissance	4	1,956	2,332	1,934	U
48	0603382N	Advanced Combat Systems Technology	4	6,547	6,879	3,458	U
49	0603502N	Surface and Shallow Water Mine Countermeasures	4	107,938	101,984	135,284	U
50	0603506N	Surface Ship Torpedo Defense	4	6,092	15,853	4,818	U
51	0603512N	Carrier Systems Development	4	134,194	149,549	165,150	U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
52	0603513N	Shipboard System Component Development	4	108,548	256,065	288,382	U
53	0603525N	PILOT FISH	4	96,019	106,611	99,600	U
54	0603527N	RETRACT LARCH	4	7,568	11,786	50,441	U
55	0603536N	RETRACT JUNIPER	4	5,980			U
56	0603542N	Radiological Control	4	585	567	1,056	U
57	0603553N	Surface ASW	4	6,723	6,690	3,724	U
58	0603559N	SSGN Coverision	4		37,416	30,000	U
59	0603561N	Advanced Submarine System Development	4	127,615	128,082	110,766	U
60	0603562N	Submarine Tactical Warfare Systems	4	4,352	4,317	5,405	U
61	0603563N	Ship Concept Advanced Design	4	31,995	5,115	1,949	U
62	0603564N	Ship Preliminary Design & Feasibility Studies	4	9,969	56,374	14,922	U
63	0603570N	Advanced Nuclear Power Systems	4	145,355	166,938	175,176	U
64	0603573N	Advanced Surface Machinery Systems	4	25,685	9,547	3,921	U
65	0603576N	CHALK EAGLE	4	89,512	64,176	35,313	U
66	0603582N	Combat System Integration	4	76,800	54,461	42,915	U
67	0603609N	Conventional Munitions	4	37,665	33,310	22,299	U
68	0603611M	Marine Corps Assault Vehicles	4	110,937	147,100	263,066	U
69	0603635M	Marine Corps Ground Combat/Support System	4	47,331	32,416	25,957	U
70	0603654N	Joint Service Explosive Ordnance Development	4	10,821	14,546	12,918	U
71	0603658N	Cooperative Engagement	4	182,307	177,612	74,231	U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
72	0603713N	Ocean Engineering Technology Development	4	15,058	15,230	16,077	U
73	0603721N	Environmental Protection	4	79,565	65,506	46,117	U
74	0603724N	Navy Energy Program	4	6,719	7,869	5,025	U
75	0603725N	Facilities Improvement	4	1,927	1,807	1,728	U
76	0603734N	CHALK CORAL	4	39,402	52,401	48,187	U
77	0603739N	Navy Logistic Productivity	4	17,428	12,880	11,735	U
78	0603746N	RETRACT MAPLE	4	118,066	122,572	148,856	U
79	0603748N	LINK PLUMERIA	4	47,924	41,983	62,601	U
80	0603751N	RETRACT ELM	4	21,233	13,417	22,200	U
81	0603755N	Ship Self Defense - Dem/Val	4	9,628	6,550	8,353	U
82	0603764N	LINK EVERGREEN	4	7,812	9,623	26,151	U
83	0603787N	Special Processes	4	68,013	61,936	58,858	U
84	0603790N	NATO Research and Development	4	5,118	8,909	11,551	U
85	0603795N	Land Attack Technology	4	129,300	138,956	130,993	U
86	0603800N	Joint Strike Fighter (JSF) - Dem/Val	4	238,420	240,820		U
87	0603851M	Nonlethal Weapons - Dem/Val	4	25,827	29,309	34,008	U
88	0603857N	All Service Combat Identification Evaluation Team (ASCIET)	4	13,898	12,989	13,530	U
89	0603879N	Single Integrated Air Picture (SIAP) System Engineer (SE)	4		20,000	43,140	U
90	0603889N	Counterdrug RDT&E Projects	4	24,091			U
91	0604327N	Hard and Deeply Buried Target Defeat System (HDBTDS) Program	4	4,591			U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item -----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
92	0604707N	Space and Electronic Warfare (SEW) Architecture/Engineering Support	4	34,775	37,750	32,259	U
		Demonstration and Validation		2,353,009	2,557,636	2,414,880	
93	0603208N	Training System Aircraft	5	295			U
94							
95	0604212N	Other Helo Development	5	72,173	36,024	64,392	U
96	0604214N	AV-8B Aircraft - Eng Dev	5	36,410	28,654	32,897	U
97	0604215N	Standards Development	5	74,391	100,740	120,552	U
98	0604216N	Multi-Mission Helicopter Upgrade Development	5	110,097	83,115	149,418	U
99	0604217N	S-3 Weapon System Improvement	5	4,918	450	428	U
100	0604218N	Air/Ocean Equipment Engineering	5	5,733	5,995	6,346	U
101	0604221N	P-3 Modernization Program	5	10,531	7,333	3,220	U
102	0604231N	Tactical Command System	5	44,510	59,242	64,832	U
103	0604234N	Common Strategic Rotary Launcher (H)	5			96,000	U
104	0604235N	Cruise Missile Surveillance Sensors (H)	5			388,496	U
105	0604245N	H-1 Upgrades	5	178,524	138,189	170,068	U
106	0604261N	Acoustic Search Sensors	5	24,782	20,545	16,825	U
107	0604262N	V-22A	5	175,919	146,589	546,735	U
108	0604264N	Air Crew Systems Development	5	17,412	28,672	7,717	U
109	0604270N	EW Development	5	208,163	133,399	112,473	U
110	0604300N	SC-21 Total Ship System Engineering	5	160,894	289,591	355,093	U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item -----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
111	0604307N	Surface Combatant Combat System Engineering	5	240,898	200,330	262,037	U
112	0604311N	LPD-17 Class Systems Integration	5	2,387	270	1,001	U
113	0604312N	Tri-Service Standoff Attack Missile	5	1,913	3,503	1,946	U
114	0604366N	Standard Missile Improvements	5	625	1,183	1,309	U
115	0604373N	Airborne MCM	5	51,103	50,842	52,041	U
116	0604503N	SSN-688 and Trident Modernization	5	70,764	72,132	43,706	U
117	0604504N	Air Control	5	14,537	13,394	12,821	U
118	0604507N	Enhanced Modular Signal Processor	5	871	867	1,013	U
119	0604512N	Shipboard Aviation Systems	5	8,675	9,627	16,375	U
120	0604518N	Combat Information Center Conversion	5	7,715	3,686	5,392	U
121	0604524N	Submarine Combat System	5	9,184	3,609		U
122	0604528N	SWATH (Small Waterplane Area Twin Hull) Oceanographic Ship	5	8,690			U
123	0604558N	New Design SSN	5	236,660	212,127	201,596	U
124	0604561N	SSN-21 Developments	5	30,505	6,557	5,770	U
125	0604562N	Submarine Tactical Warfare System	5	12,556	26,249	29,246	U
126	0604567N	Ship Contract Design/ Live Fire T&E	5	57,901	77,488	130,388	U
127	0604574N	Navy Tactical Computer Resources	5	56,160	30,608	3,836	U
128	0604601N	Mine Development	5	3,276	1,635		U
129	0604603N	Unguided Conventional Air-Launched Weapons	5	2,836	2,553	12,890	U
130	0604610N	Lightweight Torpedo Development	5	8,984	9,262	10,310	U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item -----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
131	0604618N	Joint Direct Attack Munition	5	10,800	28,845	56,285	U
132	0604654N	Joint Service Explosive Ordnance Development	5	6,870	7,037	8,123	U
133	0604703N	Personnel, Training, Simulation, and Human Factors	5	1,240	1,259	1,300	U
134	0604710N	Navy Energy Program	5	5,236	5,480	3,157	U
135	0604721N	Battle Group Passive Horizon Extension System	5	1,663	2,211	8,130	U
136	0604727N	Joint Standoff Weapon Systems	5	28,920	27,694	26,852	U
137	0604755N	Ship Self Defense - EMD	5	129,872	114,514	52,163	U
138	0604756N	Advanced Distributed Learning	5			33,530	U
139	0604757N	Medical Chemical Defense Life Material (H)	5			41,670	U
140	0604771N	Medical Development	5	15,274	27,519	5,455	U
141	0604777N	Navigation/ID System	5	16,395	18,314	23,884	U
142	0604784N	Distributed Surveillance System	5	39,077	30,924	34,711	U
143	0604800N	Joint Strike Fighter (JSF) - EMD	5		100,344	767,259	U
144	0604805N	Commercial Operations and Support Savings Initiative	5	19,587			U
145	0604910N	Smart Card	5		1,228	896	U
146	0605013M	Information Technology Development	5		6,770	11,031	U
147	0605013N	Information Technology Development	5		32,159	49,333	U
148	0605014N	Defense Integrated Military Human Resources System (DIMHRS) - RDT&E	5			47,184	U
149	0605015N	Joint Counter-Intelligence Assessment Group (JCAG) - RDT&E	5			6,000	U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
150	0508713N	Navy Standard Integrated Personnel System (NSIPS)	5		5,863	13,082	U
		Engineering and Manufacturing Development		2,225,926	2,214,621	4,122,698	
151	0604256N	Threat Simulator Development	6	27,702	25,934	30,110	U
152	0604258N	Target Systems Development	6	51,592	40,699	49,511	U
153	0604759N	Major T&E Investment	6	45,267	45,227	41,804	U
154	0605152N	Studies and Analysis Support - Navy	6	6,114	5,997	6,679	U
155	0605154N	Center for Naval Analyses	6	42,521	43,487	44,891	U
156	0605155N	Fleet Tactical Development	6	2,948	2,715	2,912	U
157	0605502N	Small Business Innovative Research	6	143,492			U
158	0605804N	Technical Information Services	6	10,047	10,848	951	U
159	0605853N	Management, Technical & International Support	6	16,646	17,481	21,628	U
160	0605856N	Strategic Technical Support	6	2,302	2,381	2,391	U
161	0605861N	RDT&E Science and Technology Management	6	54,851	52,877	54,825	U
162	0605862N	RDT&E Instrumentation Modernization	6	9,218	11,935	11,601	U
163	0605863N	RDT&E Ship and Aircraft Support	6	72,181	75,341	71,735	U
164	0605864N	Test and Evaluation Support	6	264,958	270,214	277,414	U
165	0605865N	Operational Test and Evaluation Capability	6	9,344	8,874	11,649	U
166	0605866N	Navy Space and Electronic Warfare (SEW) Support	6	1,955	3,232	3,433	U
167	0605867N	SEW Surveillance/Reconnaissance Support	6	10,975	11,586	12,693	U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item -----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
168	0605873M	Marine Corps Program Wide Support	6	29,923	17,727	9,614	U
169	0305885N	Tactical Cryptologic Activities	6		4,623	85,000	U
170	0909999N	Financing for Cancelled Account Adjustments	6	8,303			U
				-----	-----	-----	
		RDT&E Management Support		810,339	651,178	738,841	
171							
172							
173							
174	0604227N	HARPOON Modifications	7	300			U
175	0604805N	Commercial Operations and Support Savings Initiative	7		8,372		U
176	0101221N	Strategic Sub & Weapons System Support	7	57,292	53,195	43,322	U
177	0101224N	SSBN Security Technology Program	7	31,580	30,887	34,091	U
178	0101226N	Submarine Acooustic Warfare Development	7	3,857	871	996	U
179	0101402N	Navy Strategic Communications	7			4,205	U
180	0204136N	F/A-18 Squadrons	7	307,589	234,490	253,257	U
181	0204152N	E-2 Squadrons	7	38,694	44,890	20,583	U
182	0204163N	Fleet Telecommunications (Tactical)	7	11,790	11,902	21,136	U
183	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	7	137,445	90,461	76,036	U
184	0204311N	Integrated Surveillance System	7	16,908	37,084	20,041	U
185	0204413N	Amphibious Tactical Support Units	7		11,837	24,387	U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
186	0204571N	Consolidated Training Systems Development	7	36,853	36,774	22,407	U
187	0204575N	Electronic Warfare (EW) Readiness Support	7	8,678	9,833	7,659	U
188	0205601N	HARM Improvement	7	36,773	39,409	13,630	U
189	0205604N	Tactical Data Links	7	42,706	26,005	39,362	U
190	0205620N	Surface ASW Combat System Integration	7	22,544	29,314	28,119	U
191	0205632N	MK-48 ADCAP	7	19,400	15,707	17,130	U
192	0205633N	Aviation Improvements	7	48,959	50,475	41,430	U
193	0205658N	Navy Science Assistance Program	7			4,945	U
194	0205667N	F-14 Upgrade	7	1,354	11,122		U
195	0205675N	Operational Nuclear Power Systems	7	52,880	52,945	55,202	U
196	0206313M	Marine Corps Communications Systems	7	89,355	107,102	104,835	U
197	0206623M	Marine Corps Ground Combat/Supporting Arms Systems	7	29,020	39,061	43,935	U
198	0206624M	Marine Corps Combat Services Support	7	11,852	3,876	8,483	U
199	0207161N	Tactical AIM Missiles	7	38,872	21,473	16,402	U
200	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	7	13,063	12,011	10,795	U
201							
202							
203	0303109N	Satellite Communications (SPACE)	7	40,015	39,413	54,230	U
204	0303140N	Information Systems Security Program	7	20,105	31,835	20,942	U

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DEPARTMENT OF THE NAVY
FY 2002 RDT&E PROGRAM

EXHIBIT R-1

APPROPRIATION: 1319N Research, Development, Test & Eval, Navy

Date: JUNE 2001

Line No --	Program Element Number -----	Item ----	Act ---	Thousands of Dollars			S E C -
				FY 2000 -----	FY 2001 -----	FY 2002 -----	
205							
206	0305160N	Navy Meteorological and Ocean Sensors-Space (METOC)	7	18,202	19,549	23,492	U
207	0305188N	Joint C4ISR Battle Center (JBC)	7	8,045	9,705	13,618	U
208	0305192N	Joint Military Intelligence Programs	7	1,994	6,936	7,179	U
209	0305204N	Tactical Unmanned Aerial Vehicles	7	75,029	121,753	66,349	U
210	0305206N	Airborne Reconnaissance Systems	7	18,779	26,135	5,736	U
211	0305207N	Manned Reconnaissance Systems	7	39,582	46,014	29,232	U
212	0305208N	Distributed Common Ground Systems	7	5,530	4,434	4,467	U
213	0305927N	Naval Space Surveillance	7	1,685	1,425	4,237	U
214	0308601N	Modeling and Simulation Support	7	10,920	13,976	7,828	U
215	0702207N	Depot Maintenance (Non-IF)	7	42,822	39,802	13,569	U
216	0708011N	Industrial Preparedness	7	69,474	68,987	70,605	U
217	0708730N	Maritime Technology (MARITECH)	7	20,512	9,280	20,065	U
				-----	-----	-----	
		Operational Systems Development		1,958,212	2,195,158	2,133,800	
				-----	-----	-----	
		Total Research, Development, Test & Eval, Navy		9,064,511	9,458,007	11,123,389	

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EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0603208N

PROGRAM ELEMENT TITLE: Training System Aircraft

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 2000 Actual</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>FY2006 Estimate</u>	<u>FY2007 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
H1150 Joint Primary Aircraft Trainer System	295									
TOTAL	295	0	0							

Quantity of RDT&E Articles: N/A

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Primary Aircraft Training System (JPATS) is an ACAT 1C, non-developmental item (NDI), commercial off-the-shelf (COTS) pilot program initiated to provide a high degree of commonality between the flight training programs of the United States Navy (USN) and United States Air Force (USAF). The JPATS is to replace the T-34 and T-37 for the USN and USAF, respectively. JPATS shall employ a common primary training system, consisting of aircraft, aircrew training devices (simulators, computer-aided instruction terminals, etc.), syllabus, courseware, and logistics support. The JPATS mission will be to train entry-level USN/USAF student pilots and navigators. The training information management system (TIMS) is a major information management system that will be used by the USN/USAF to manage all student administrative and training requirements. TIMS will be procured and installed prior to the first Navy T-6A aircraft. The U.S. Air Force is the executive service. This element funds Navy unique courseware development, a courseware conversion study, and Navy support of development flight test.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

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EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0603208N

PROGRAM ELEMENT TITLE: Training System Aircraft

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

(U) (\$205) Completed joint qualification test of aircraft and maintain USN test pilot proficiency.

(U) (\$90) Completed technical analysis and support of development program management activities.

2. FY 2001 PLAN: N/A

3. FY 2002 PLAN: N/A

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) FY 2001 President's Budget Submit:	310	0	0
(U) Adjustments from FY 2001 President's Budget	-15	0	0
(U) FY 2002 President's Budget Submit:	295	0	0

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EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0603208N

PROGRAM ELEMENT TITLE: Training System Aircraft

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY2001 decrease of \$15 thousand reflects a decrease of \$7 thousand for a Small Business Innovative Research assessment , a decrease of \$7 thousand for a reprioritization of requirements within the Navy, and a decrease of \$1 thousand for a Congressional Recission.

(U) Schedule: Change to program milestone profile reflects new Acquisition Program Baseline. Change to contract milestone profile corrected anticipated award date of next contract option.

(U) Technical: N/A

(U) C. OTHER PROGRAM FUNDING SUMMARY

<u>Appn</u>	<u>FY 2000 Actual</u>	<u>FY 2001 Budget</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>FY 2006 Estimate</u>	<u>FY2007 Estimate</u>	<u>To Complete</u>
APN-3	55,355	80,625	0						
APN-6	0	0	0						

Related RDT&E: Not applicable.

() P.E.

(U) D. ACQUISITION STRATEGY:

JPATS is a joint Air Force/Navy Acquisition 1C program, with the Air Force as executive service. JPATS is also a pilot program for acquisition reform. The contract was competitively awarded as a fixed price incentive fee (FPIF) contract for manufacturing development, plus seven priced production lot options.

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EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0603208N
PROGRAM ELEMENT TITLE: Trainer System Aircraft

(U) E. SCHEDULE PROFILE

FY 2000 FY 2001 FY 2002 TO COMPLETE

(U) Program Milestones 1Q/02 MS III

(U) Engineering Milestones

(U) T&E Milestones 2Q/00 A/C MOT&E

(U) Contract Milestones

*US Air Force manufacturing development/production contract. US Navy begins aircraft buy in Lot 7.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						0604212N ASW & OTHER HELO DEVELOPMENT					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	76.323	57.559	36.024	64.392							
H1109 CH/MH-53		3.447	0.461	2.321							
H1709 CH-60S VERTREP	32.102	18.593	0.000	0.000							
H2415 CH-60S Development	41.316	25.199	22.944	36.948							
H2463 LAMPS MK III DATA LINK	2.905	10.320	12.619	25.123							
Quantity of RDT&E Articles	1	2		16							
<div>H2415</div> <div>* FY 2000 budget reflects a \$10M Congressionaladd for CSTRS prototypes executed under H2773, which was reduced by \$.277 for Congressionalundistributed adjustments and a \$1.0M Congressionaladd for Sentient Sensor Development executed under H2772, which was reduced by \$.013M for Congressional undistributed adjustments.</div> <div>** The FY 2001 budget reflects a \$10M Congressional add for CSTRS which will be executed under H2773.</div> <div>*** The FY 2002 budget does not include \$12.8M for AMCM aircraft modifications. This funding is reflected in PE 0604216N under Project E3053.</div> <div>H2463</div> <div>* FY 2000 budget reflects a \$1.0M Congressional add for Ship-Air Mission Systems Integration executed under H2774, which has been reduced by \$.026M for Congressional Recission and undistributed adjustments.</div> <div>** FY 2001 budget reflects a \$2.0M Congressionaladd for Upgrading the Ship Ground Station at NAWC Aircraft Division which has been reduced by \$.014 for Pro-Rata Recission and \$.004 for Government Wide Recission and will also be executed under H2774.</div>											
<div>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</div> <div>H1109 - In FY-2000, RDT&E efforts included the Improved External Lifting Device (IELD) program which consisted of dynamic structures modeling, system design, prototype development, and electro environmental and flight testing to document load matrix configuration. From FY-2000 to FY-2007, H-53E efforts continue to develop and qualify components to replace obsolete system components and incorporate supportability improvement modifications to support H-53E Service Life Extension Program (SLEP) Phase II and Phase III requirements. Modeling and simulation will be used to the maximum practical extent throughout this effort. Manned Flight Simulator (MFS) will be utilized to develop, install and test interim modifications to existing H-53E legacy avionics, while maintaining the original basic system footprint and functionality. As a part of this effort, a complete electromagnetic vulnerability (EMV) assessment will be required for the affected and/or modified systems. During FY-2002 RDT&E efforts will focus on the following SLEP Phase II requirements; External Cargo Handling System, Aircraft Armor, Satellite Communications and Avionics Obsolescence. Also, the program will address SLEP Phase III efforts by increasing the H-53E cabin floor loading requirements to</div>											

R-1 SHOPPING LIST - Item No. 95

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVYBA-5	R-1 ITEM NOMENCLATURE 0604212N ASW & OTHER HELO DEVELOPMENT	
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION (CON'T):</p> <p>H1709 - The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations th search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The CH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the CH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.</p> <p>H2415 - The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations th search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The CH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the CH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.</p> <p>H2463 - The Light Airborne Multi-Purpose System (LAMPS) MK III helicopter is deployed on Ticonderoga Class cruisers, Arleigh Burke Class Destroyer and Spruance Class destroyers, and Oliver Hazard Perry Class frigates, and provides an all-weather capability for detection, classification, and localization of ships and submarines. LAMPS is an integrated ship-to-helicopter, computer-to-computer weapon system designed to increase and extend the effectiveness of the surface combatant in the performance of its mission. Currently the LAMPS helicopter is tied to its host surface ship via a C-Band bi-directional data link. This data link transfers FLIR, radar, Electronic Support Measures (ESM), Identification Friend or Foe (IFF), voice, tactical symbology, and acoustic information between the helicopter and ship making the helicopter an extension of the ships sensors and increasing the sensor horizon of the ship. The recent introduction of Cooperative Engagement Capability (CEC) into the fleet has created an Electro Magnetic Interference (EMI) problem because it operates within the same C-Band frequency spectrum as the data link. In some CEC operating modes, it completely masks the LAMPS data link resulting in of information exchange between the ship and helicopter. To resolve this EMI issue, the LAMPS data link is being moved from the C-Band frequency to the KU-Band. Funding supports development and delivery of 10 air and 6 surface test articles from two vendors in FY 02. This allows ample time for the merge of vendor designs and the development of common interfaces.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>		

R-1 SHOPPING LIST - Item No. 95

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604212N ASW & OTHER HELO DEVELOPMENT					H1109 CH/MH-53					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		3.447	0.461	2.321							
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: In FY-2000, RDT&E efforts included the Improved External Lifting Device (IELD) program which consisted of dynamic structures modeling, system design, prototype development, and electro environmental and flight testing to document load matrix configuration. From FY-2000 to FY-2007, H-53E efforts continue to develop and qualify components to replace obsolete system components and incorporate supportability improvement modifications to support H-53E Service Life Extension Program (SLEP) Phase II and Phase III requirements. Modeling and simulation will be used to the maximum practical extent throughout this effort. Manned Flight Simulator (MFS) will be utilized to develop, install and test interim modifications to existing H-53E legacy avionics, while maintaining the original basic system footprint and functionality. As a part of this effort, a complete electromagnetic vulnerability (EMV) assessment will be required for the affected and/or modified systems. During FY-2002, RDT&E efforts will focus the following SLEP Phase II requirements; External Cargo Handling System, Aircraft Armor, Satellite Communications and Avionics Obsolescence. Also, the program will address SLEP Phase III efforts by increasing the H-53E cabin floor loading requirements to meet the future internal cargo growth requirements, and assessing and designing a composite main rotor blade to increase lift performance, maintainability and to reduce life cycle costs.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$.183) Continued In-house travel and field activities funding to support program.
- (U) (\$2.005) Provided funding to support IELD program. This included dynamic structures modeling, system design, and prototype development. Performed flight testing to determine electro environmental effects and document load matrix configuration.
- (U) (\$.535) Continued H-53E Avionics Obsolescence/Updated Cockpit - Explored options (through study) for taking existing avionics and upgrading internal parts.
- (U) (\$.574) Conducted Rotor Hub Quality Testing on new configuration to extend life of aircraft.
- (U) (\$.150) Continued Modeling Fidelity and Data Correlation - Placed final SLAP data into the U.S. model at Carderock.

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 3 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTE&E, N / BA-5	0604212N ASW & OTHER HELO DEVELOPMENT	H1109 CH/MH-53
<p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none">- (U) (\$.187) Continue In-house travel and field activities funding to support program.- (U) (\$.266) Continue H-53 Avionics Obsolescence/Updated Cockpit. This includes a cockpit study on the layout development, human factors of component layout and component commonality.- (U) (\$.008) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 usc 68. <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$.352) Conduct External Cargo Handling System Design.- (U) (\$.350) Conduct External Cargo System Indicator Design.- (U) (\$.350) Conduct Aircraft Vulnerability Armor Assessment.- (U) (\$.250) Conduct Armor Threat Assessment on aircraft.- (U) (\$.400) Conduct Armor Selection/Test.- (U) (\$.269) Conduct Cockpit and Aircraft System Assessment.- (U) (\$.227) Testing other Aircraft Integration Candidates.- (U) (\$.123) Continue In-house travel and field activities funding to support program.		

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-2, RDTEEN Budget Item Justification
(Exhibit R-2, page 4 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	
		June 2001	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDTE&E, N / BA-5	0604212N ASW & OTHER HELO DEVELOPMENT	H1109 CH/MH-53	
(U) B. PROGRAM CHANGE SUMMARY:			
	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget:	3.987	0.466	2.334
(U) Adjustments from the President's Budget:	-0.540	-0.005	-0.013
(U) FY 2002 President's Budget Submit:	3.447	0.461	2.321
CHANGE SUMMARY EXPLANATION:			
(U) Funding: The FY 2000 net decrease of \$.540 million consists of a decrease of \$.044 million for a Small Business Innovation Research Assessment, a \$.480 million decrease for the reprioritization of requirements within the Navy, and a \$.016 million decrease for a Congressional Recission. The FY 2001 net decrease of \$.005 million consists of a decrease of \$.001 million for reprioritization of requirements within the Navy, a \$.003 million decrease for a Congressional Reduction, and a \$.001 million decrease for a Congressional Recission. The FY 2002 net decrease of \$.013 million consist of a decrease of \$.003 million for economic assumptions and a \$.010 million decrease for reprioritization of requirements within the Navy.			
(U) Schedule: The Cargo Hook System scheduled for 2Q/00 and the Spindle Study scheduled for 3Q/00 were both cancelled. The H-53E effort to extend the life of the Rotor Hub began 4Q/00.			
(U) Technical: Not Applicable.			
(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable			

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Exhibit R-2, RDTEEN Budget Item Justification
(Exhibit R-2, page 5 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H1109 CH/MH-53
(U) D. ACQUISITION STRATEGY: This is a non-ACAT program with no specific acquisition strategies.		
(U) E. SCHEDULE PROFILE:		
	<u>FY 2000</u>	<u>FY 2001</u>
(U) Program Milestones (Not Applicable)		<u>FY 2002</u>
(U) Engineering Milestones	1Q/00 - 4Q/00 H-53E Develop & Qualify Component 2Q/00 - 3Q/00 IELD Sys Design 3Q/00-4Q/00 IELD Prototype Dev	1Q/01-4Q/01 H-53E Develop & Qualify Component
		1Q/02-4Q/02 External Cargo Handling Sys Design 1Q/02-4Q/02 Ext Cargo Handling Indicator Design 1Q/02-4Q/02 Aircraft Vulnerability Assessment 1Q/02-4Q/02 Armor Threat Assessment 1Q/02-4Q/02 Cockpit and A/C System Assessment 1Q/02-4Q/02 Other A/C Cockpit Integration Candidates
(U) T&E Milestones	3Q/00-4Q/00 IELD TESTFLT 4Q/00 Rotor Hub Quality Testing	1Q/02-4Q/02 Armor Selection Test

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 6 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604212N ASW & OTHER HELO DEVELOPMENT	H1109 CH/MH-53
(U) E. SCHEDULE PROFILE:		
	<u>FY 2000</u>	<u>FY 2001</u>
(U) T&E Milestones (Continued)		<u>FY 2002</u>
(U) Contract Milestones	1Q/00 Pin Bending Test Result Outbrief	

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 7 of 24)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY								June 2001				
RDT&E, N / BA-5			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			0604212N ASW & OTHER HELO DEVELOPMENT			H1109 CH/MH-53E						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
External Cargo Handling System	SS CPFF	SIKORSKY, Stratford, CT				0.352	03/02					0.352
External Cargo System Indicator Des	SS CPFF	SIKORSKY, Stratford, CT				0.350	03/02					0.350
Design Armor Package	SS CPFF	SIKORSKY, Stratford, CT										0.750
Integrated Software Applique	WX	NAWCAD, Pax River, MD										
Architecture Selection	WX	NAWCAD, Pax River, MD										
IELD	WX	NAWCAD, Pax River, MD	2.005									
Subtotal Product Development			2.005			0.702						
Remarks:												
H-53 Avionics Obsolescence	WX	NAVICP, Philadelphia, PA	0.535	0.266	11/00							
Aircraft Vulnerability Assessment	SS CPFF	SIKORKSY, Stratford, CT				0.350	03/02					0.350
Aircraft Integration Candidates	WX	NAWCAD, Pax River, MD				0.227	10/01					
Cockpit & Aircraft Sys Assessment	WX	NAWCAD, Pax River, MD				0.269	10/01					
Armor Threat Assessment	WX	NAWCAD, Pax River, MD				0.250	10/01					
Modeling Fidelity & Data Correlation	WX	NSWC, Carderock, MD	0.150									
SBIR Assessment				0.008								
Subtotal Support			0.685	0.274		1.096						
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 24)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RD&E, N / BA-5			PROGRAM ELEMENT 0604212N ASW & OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME H1109 CH/MH-53						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Armor Selection Testing	WX	NAWCAD, Pax River, MD				0.400	10/01					
Design & Breadboard Testing	WX	NAWCAD, Pax River, MD										
Testing Antennae, AMP & Modem	WX	NAWCAD, Pax River, MD										
Model & Test Design Effectiveness	WX	NAWCAD, Pax River, MD										
Rotor Hub Quality Testing	SS CPFF	SIKORSKY, Stratford, CT	0.574									0.574
Subtotal T&E			0.574			0.400						
Remarks:												
Travel	WX	NAWCAD, Pax River, MD	0.183	0.187	11/00	0.123	11/01					
Subtotal Management			0.183	0.187		0.123						
Remarks:												
Total Cost			3.447	0.461		2.321						
Remarks:												

R-1 SHOPPING LIST - Item No. 95

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 9 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604212N ASW and Other Helo Development					H1709 MH-60S VERTREP					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	32.102	18.593	0	0							
RDT&E Articles Qty	1										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations through search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The MH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the MH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$ 5.890) Continued developmental efforts on a production representative MH-60S helicopter. Procured supplies and services which include ground and flight tests, logistics support, NRE documentation, and engineering support for testing.
- (U) (\$4.741) Completed Navy field activity program management and travel for MH-60S and Airborne Mine Countermeasures.
- (U) (\$6.067) Completed Airborne Mine Countermeasures Phase III Tow Test.
- (U) (\$1.895) Continued developmental efforts on a production representative MH-60S helicopter. Procured supplies and services which included engineering investigations and studies, nonrecurring engineering and design, and common cockpit testing.

2. FY 2001 PLANS:

- (U) Not applicable

3. FY 2002 PLANS:

- (U) Not applicable

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	PROJECT NUMBER AND NAME H1709 MH-60S VERTREP

(U) B. PROGRAM CHANGE SUMMARY:

	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget:	19.526	0	0
(U) Adjustments from the President's Budget:	-0.933	0	0
(U) FY 2002 President's Budget Submit:	18.593	0	0

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 net decrease of \$.933 million reflects a decrease of \$.477 million for a Small Business Innovation Research assessment, a decrease of \$.379 million for reprioritization of requirements within the Navy , and a decrease of \$0.077 million for Congressional Recission.

(U) Schedule: FY 2001 reflects an OPEVAL schedule slip and TECHEVAL was extended due to additional Common Cockpit testing transferred from SH-60R to MH-60S.

(U) Technical: N/A

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
024000 APN-2 MH-60S	355.742	284.696	258.969
060510 APN-6 MH-60S	5.808	33.223	7.469
0204302 OPN AMCM	0.000	0.000	8.509
<u>Related RDT&E -</u> (U) PE: 0604212N; Project Unit: H2415	25.199	22.944	36.941

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development	PROJECT NUMBER AND NAME H1709 MH-60S VERTREP
(U) D. ACQUISITION STRATEGY:		
(U) E. SCHEDULE PROFILE:		
	<u>FY 2000</u>	<u>FY 2001</u>
(U) Program Milestones		MS-III - 4Q/01
(U) Engineering Milestones		
(U) T&E Milestones	CT/DT-IIA 2Q/00 - 2Q/01 Phase III Tow Demo 4Q/00 TECHEVAL 3Q/00 - 2Q/01	OPEVAL 2Q/01 - 3Q/01
(U) Contract Milestones		

R-1 SHOPPING LIST - Item No.

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604212N ASW and Other Helo Development					H2415 MH-60S Development					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	41.316	25.199*	22.944**	36.948							
RDT&E Articles Qty		2									

* FY 2000 budget reflects a \$10M Congressional add for CSTRS prototypes executed under H2773, which was reduced by \$.277 for Congressional undistributed adjustments and a \$1.0M Congressional add for Sentient Sensor Development executed under H2772, which was reduced by \$.013M for Congressional undistributed adjustments.

** The FY 2001 budget reflects a \$10M Congressional add for CSTRS which will be executed under H2773.

***The FY 2002 budget does not include \$12.8M for AMCM aircraft modifications. This funding is reflected in PE 0604216N under Project E3053.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations through search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The MH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the MH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$ 4.588) Continued AMCM integration efforts into the MH-60S helicopter. Procured supplies and services which include engineering investigations, nonrecurring engineering, and design. Performed trade studies and analysis for AMCM sensor integration and AMCM Sensor Console.
- (U) (\$8.050) Developed and procured two Carriage, Stream, Tow, & Recovery System (CSTRS) prototypes. Conducted engineering analysis and trade studies to define unique requirements for all five AMCM sensors. (Congressional Plus-Up).
- (U) (\$3.800) Continued design, development, integration and support of the Automatic Flight Control System for the MH-60S helicopter.
- (U) (\$1.673) Continued Navy field activity systems engineering and test support, program management, and travel for CSTRS efforts. (Congressional Plus-Up)
- (U) (\$6.101) Continued Navy field activity systems engineering and test support, program management, and travel for AMCM.
- (U) (\$0.987) Proceeded with a Phase III SBIR effort to demonstrate the feasibility of use of "Sentient Sensors".

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R-1 SHOPPING LIST - Item No. 94

Exhibit R-2, RDTE Budget Item Justification

(Exhibit R 2, page 13 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		June 2001
PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW and Other Helo Development		PROJECT NUMBER AND NAME H2415 MH-60S Development
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$3.930) Continue the design, development, integration and support of the interoperability of a Common AMCM Sensor Console for the MH-60S. Design, develop, integrate and support the interoperability of Automatic Flight Control System (AFCS). - (U) (\$6.222) Continue integration analysis and nonrecurring engineering efforts supporting the development and integration of the Airborne Mine Countermeasures (AMCM) unique items into the MH-60S helicopter. Commence integration of design changes into the Common Console and Common Cockpit. - (U) (\$8.196) Continue development of Carriage, Stream, Tow, & Recovery System (CSTRS) prototypes. Conduct engineering analysis and trade studies to define unique requirements for all five AMCM sensors. (Congressional Plus-Up). - (U) (\$1.311) Continue Navy field activity systems engineering and test support, program management, and travel for CSTRS efforts. (Congressional Plus-Up) - (U) (\$2.281) Continue Navy field activity systems engineering and test support, program management, and travel. - (U) (\$0.340) Perform Live Fire Test and Evaluation for the MH-60S program. - (U) (\$ 0.664) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68. <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$4.111) Continue the design, development, integration and support of the AMCM unique items into the MH-60S. - (U) (\$14.100) Begin the engineering and integration effort to incorporate AMCM requirements into the aircraft and ship C4I structure. - (U) (\$5.000) Begin T&E on AMCM Mission Kits as each weapon system is introduced to the MH-60S. - (U) (\$8.657) Continue developmental efforts on a production representative MH-60S helicopter. Supplies and services include engineeering investigations, nonrecurring engineering, and design. Continue development of the prototype consoles, as well as software modifications, to support AMCM sensors and palletized system. - (U) (\$2.607) Continue Navy field activity systems engineering and test support, program management, and travel. - (U) (\$0.580) Continue Live Fire Test and Evaluation for the MH-60S program. - (U) (\$1.893) Begin AMCM Training development. Tasks include a training situation analysis, instructional system development (ISD) documentation, and flight simulator aero model update. 		

R-1 SHOPPING LIST - Item No. 94

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 14 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																																												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N ASW & Other Helo Development	PROJECT NUMBER AND NAME H2415 MH-60S Development																																													
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: right;"><u>FY2000</u></th> <th style="text-align: right;"><u>FY2001</u></th> <th style="text-align: right;"><u>FY2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">26.134</td> <td style="text-align: right;">13.177</td> <td style="text-align: right;">15.519</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-0.935</td> <td style="text-align: right;">9.767</td> <td style="text-align: right;">21.429</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: right;">25.199</td> <td style="text-align: right;">22.944</td> <td style="text-align: right;">36.948</td> </tr> </tbody> </table> <p style="margin-left: 40px;">CHANGE SUMMARY EXPLANATION:</p> <p style="margin-left: 40px;">(U) Funding: The FY 2000 net decrease of \$0.935 million reflects a decrease of \$.537 million for Small Business Innovation Research assessment, a decrease of \$.296 million for a reprioritization of requirements within the Navy, a decrease of \$.102 for congressional recession. The FY 2001 net increase of \$9.767 reflects a \$10M increase for Airborne Mine Counter Measures offset by a decrease of \$.021 million for a reprioritization of requirements within the Navy, a decrease of \$.162 for a Congressional reduction and a decrease of \$.050 for economic assumptions. The FY 2002 net increase of \$21.429 million reflects an increase of \$19.100 million for AMCM Mission Kits and an increase of \$2.473 million for MH-60S Simulator Development offset by a decrease of \$.138 million for reprioritization of requirements within the Navy and a decrease of \$.006 million for economic assumptions.</p> <p style="margin-left: 40px;">(U) Schedule: FY 2000 Phase III Tow Demo, CT/DT-IIA, TECHEVAL, and OPEVAL (OT-IIB) are reflected in P.U. H1709 to align execution with budget. As a result of ORD approval, and pending IPR decision, additional AMCM milestones have been added. MH-60S MS-III has also moved to H1709.</p> <p style="margin-left: 40px;">(U) Technical: N/A</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>024000 APN-2 MH-60S</td> <td style="text-align: right;">355.742</td> <td style="text-align: right;">284.696</td> <td style="text-align: right;">246.169</td> </tr> <tr> <td>060510 APN-6 MH-60S</td> <td style="text-align: right;">5.808</td> <td style="text-align: right;">33.223</td> <td style="text-align: right;">8.787</td> </tr> <tr> <td>0204302 OPN AMCM</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">8.509</td> </tr> <tr> <td colspan="4"><u>Related RDT&E -</u></td> </tr> <tr> <td>(U) P.E. Project Number H1709</td> <td style="text-align: right;">18.593</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>(U) P.E. 0604216N Project Number E3053</td> <td></td> <td></td> <td style="text-align: right;">12.800</td> </tr> </tbody> </table>					<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	(U) FY 2001 President's Budget:	26.134	13.177	15.519	(U) Adjustments from the President's Budget:	-0.935	9.767	21.429	(U) FY 2002 President's Budget Submit:	25.199	22.944	36.948	<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	024000 APN-2 MH-60S	355.742	284.696	246.169	060510 APN-6 MH-60S	5.808	33.223	8.787	0204302 OPN AMCM	0.000	0.000	8.509	<u>Related RDT&E -</u>				(U) P.E. Project Number H1709	18.593	0.000	0.000	(U) P.E. 0604216N Project Number E3053			12.800
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EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604212N ASW & Other Helo Development	H2415 MH-60S Development	
(U) D. ACQUISITION STRATEGY:			
(U) E. SCHEDULE PROFILE:			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) Program Milestones	ORD Annex Approved 3Q AMCM IPR 3Q	AMCM IPR 3Q	
(U) Engineering Milestones		AFCS Design/Integration CDR 3Q Common Console CDR 4Q	AMCM AFCS Delivery 2Q Common Console Delivery 2Q
(U) T&E Milestones	Phase II Tow Demo Completed 2Q	MH-60S OPEVAL Complete 3Q (OT-IIB)	
(U) Contract Milestones	CSTRS Contract Award 2Q AFCS Contract Award 4Q	Weapon System Integrator Contract Award 2Q	

R-1 SHOPPING LIST - Item No.

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 16 of 24)

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Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY								June 2001				
RDT&E, N / BA-5			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			0604212N ASW & Other Helo Development			H2415 MH-60S Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
AMCM NRE & Tow Demo/AFCC	SS/CPFF	Sikorsky, Stratford, CT	8.056	3.930	01/01	4.111	01/02					0.000
Common Cockpit Development	845OT	Lockheed Martin, Owego, NY	7.334									7.334
CSTRS Development	SS/FFP	CTC, Johnstown, PA	8.310	8.196	01/01							0.000
AMCM System Integration & Analysis	SS/CPFF	Lockheed Martin, Owego, NY	6.348	6.567	01/01	10.550	01/02					0.000
CSTRS Integration	SS/CPFF	Sikorsky, Stratford, CT	2.000									0.000
MH-60S NRE	SS/CPFF	Sikorsky, Stratford, CT	16.107									0.000
MH-60S TDCL Development	TBD	TBD				9.100	01/02					0.000
Subtotal Product Development			48.155	18.693		23.761						7.334
Remarks:												
Misc In-House Engineering & Logistics	WX	NSWC	7.207	0.500	12/00	0.500	11/01					
Engineering, Studies, Tech Supt	Various	NAWCAD	1.687									
Subtotal Support			8.894	0.500		0.500						

R-1 SHOPPING LIST - Item No. 95

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 17 of 24)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604212N ASW & Other Helo Development			PROJECT NUMBER AND NAME H2415 MH-60S Development					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
AMCM Test & Evaluation Engineering	WX	NAWCAD Patuxent River	4.534	0.500	12/00	0.500	11/01					
AMCM TCDL MH-60S	TBD	TBD				5.000	01/02					0.000
AMCM T&E	TBD	TBD		0.340	01/01	5.580	01/02					0.000
Sentient Sensor	SS/CPFF	Management Sciences Inc	0.987									0.000
Subtotal T&E			5.521	0.840		11.080						
Remarks:												
Misc Management Support	RX	Various	0.516	0.881	12/00	1.307	01/02					0.000
Program Management Support	Various	NAVAIR	2.824									
Engineering Support	Various	NAWCAD	0.605	0.350	12/00	0.256	12/01					
Travel	WX	NAWCAD		0.050	11/00	0.044	11/01					
CSTRS Field Activity Support	WX	Various		1.630	11/00							
Subtotal Management			3.945	2.911		1.607						
Remarks:												
Total Cost			66.515	22.944		36.948						
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 18 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604212N / ASW & OTHER HELO DEVELOPMENT					H2463 / LAMPS MK III DATA LINK					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
		*		**							
Project Cost	2.905	10.320	12.619	25.123							
RDT&E Articles Qty				16							

* FY 2000 budget reflects a \$1.0M Congressional add for Ship-Air Mission Systems Integration executed under H2774, which has been reduced by \$.026M for Congressional Recission and undistributed adjustments.
 ** FY 2001 budget reflects a \$2.0M Congressional add for Upgrading the Ship Ground Station at NAWC Aircraft Division which has been reduced by \$.014 for Pro-Rata Recission and \$.004 for Government Wide Recission and will also be executed under H2774.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Light Airborne Multi-Purpose System (LAMPS) MK III helicopter is deployed on Ticonderoga Class cruisers, Arleigh Burke Class Destroyer and Spruance Class destroyers, and Oliver Hazard Perry Class frigates and provides an all-weather capability for detection, classification, and localization of ships and submarines. LAMPS is an integrated ship-to-helicopter, computer-to-computer weapon system designed to increase and extend the effectiveness of the surface combatant in the performance of its mission. Currently the LAMPS helicopter is tied to its host surface ship via a C-Band bi-directional data link. This data link transfers FLIR, radar, Electronic Support Measures (ESM), Identification Friend or Foe (IFF), voice, tactical symbology, and acoustic information between the helicopter and ship making the helicopter an extension of the ship's sensors and increasing the sensor horizon of the ship. The recent introduction of Cooperative Engagement Capability (CEC) into the fleet has created an Electro Magnetic Interference (EMI) problem because it operates within the same C-Band frequency spectrum as the data link. In some CEC operating modes, it completely masks the LAMPS data link resulting in loss of information exchange between the ship and helicopter. To resolve this EMI issue, the LAMPS data link is being moved from the C-Band frequency to the KU-Band. Funding supports development and delivery of 10 air and 6 surface test articles from two vendors in FY 02. This allows ample time for the merge of vendor designs and the development of common interfaces.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$7.000) Coordinated Non-recurring Engineering (NRE) to continue development of Tactical Common Data Link (TCDL) via CSS 845 Agreement. Performed In-Process Review (IPR).
- (U) (\$1.086) Developed Engineering Change Proposal (ECP) to integrate TCDC onto LAMPS air and ship segments and support Ship-Air Mission Systems Integration.
- (U) (\$.550) Coordinated technical services to review and evaluate the vendor progress. Participated in IPR.
- (U) (\$.060) Maintained Program Management and travel.
- (U) (\$.650) Maintained Field Activity, Engineering and Technical Support and Integrated Logistics Support.
- (U) (\$.974) Maintained Ship Air Mission Systems Integration.

R-1 SHOPPING LIST - Item No. 95

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 19 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTE&E, N / BA-5	0604212N / ASW & OTHER HELO DEVELOPMENT	H2463 / LAMPS MK III DATA LINK
<p>2. FY 2001 PLAN:</p> <ul style="list-style-type: none">- (U) (\$7.377) Continue NRE, manufacturing, and development effort by both vendors.- (U) (\$1.525) Continue integration of TCDL on LAMPS Air and Ship segments; conduct Contractor Lab Testing; and start Request for Proposal (RFP) to select vendor for production.- (U) (\$440) Continue technical services to review and evaluate vendor progress. Participate in CDR.- (U) (\$060) Continue Program Management and travel.- (U) (\$912) Continue Field Activity, Engineering and Technical Support and Integrated Logistics Support- (U) (\$332) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.-(U) (\$1.973) Continue the Ship Air Mission Systems Integration to include upgrading the Ship Ground Station. <p>3. FY 2002 PLAN:</p> <ul style="list-style-type: none">- (U) (\$14.568) Continue NRE, manufacturing, and development effort by both vendors.- (U) (\$6.700) Continue integration of TCDL on LAMPS Air and Ship segments; conduct Contractor Lab Testing; and start Request for Proposal (RFP) to select vendor for production.- (U) (\$440) Continue technical services to review and evaluate vendor progress.- (U) (\$060) Continue Program Management and travel.- (U) (\$1.150) Continue Field Activity, Engineering and Technical Support and Integrated Logistics Support.- (U) (\$2.205) Perform Flight Testing, Development/Operational Test and Evaluation (DT/OT) of airborne and surface segments, environmental, and reliability testing.		

R-1 SHOPPING LIST - Item No. 95

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Exhibit R-2, RDTE&E Budget Item Justification
(Exhibit R-2, page 20 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTE, N / BA-5	0604212N / ASW & OTHER HELO DEVELOPMENT	H2463 / LAMPS MK III DATA LINK

(U) D. ACQUISITION STRATEGY: PMA-299 exercised an option on a Navy Section 845 Agreement for two vendors to develop a TCDL solution for LAMPS. Upon completion, two vendors will be qualified to compete for the production of TCDL data links to both LAMPS air and ship segments. A competition leading to a down select will integrate the TCDL KU-Band Data Link into the LAMPS MK III weapons system, ships and aircraft. Production will begin in FY 2004.

(U) E. SCHEDULE PROFILE:

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) Program Milestones			
(U) Engineering Milestones		(4Q/01) CDR	
(U) T&E Milestones			(4Q/02) DT/OT
(U) Contract Milestones			(4Q/02) Pre-Prod Delivery
			(4Q/02) RFP for FY03 Production Contract

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 21 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604212N / ASW & OTHER HELO DEVELOPMENT	PROJECT NUMBER AND NAME H2463 / LAMPS MK III DATA LINK

(U) B. PROGRAM CHANGE SUMMARY:

	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget:	10.795	10.750	25.254
(U) Adjustments from the President's Budget:	-0.475	1.869	-0.131
(U) FY 2002 President's Budget Submit:	10.320	12.619	25.123

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 net decrease of \$.475 million reflects a decrease of \$.242 million for a Small Business Innovative Research assessment, a decrease of \$.191 million for a reprioritization of requirements within the Navy and a decrease of .042 for a Congressional Recission. The FY 2001 net increase of \$1.869 million reflects a \$1.982 million Congressional add for Ship Air Mission System Integration offset by a decrease of \$.015 million for a reprioritization of requirements within the Navy, a decrease of \$.075 million for a Congressional Reduction, and a decrease of \$.023 million for a Congressional Recission. The FY 2002 net decrease of \$.131 million reflects a decrease of \$.099 million for a reprioritization of requirements within the Navy and a decrease of \$.032 million for economic assumptions.

(U) Schedule: The Ku band data link effort is built around cross-vendor, intra-vendor interoperability and competition in line with current OSD C4I policies. Each vendor has submitted their preliminary designs and during the review process, it was determined that the vendor designs were form, fit, functionally diverging. In order to implement interoperability, the LAMPS Ku Band effort had to merge the vendor designs and develop a "common" interface control document and Dynamic Object Oriented Requirements System (DOORS) requirements document. As a result of this necessity, the data link effort has experienced a minor schedule delay. CDR has moved to (4Q/01) which now makes for PreProd deliveries in (4Q/02) to accommodate the merging of the vendor designs. These deliveries are in line to meet LAMPS DT/OT in (4Q/02) in order to coincide with current LAMPS testing. Production RFP will be released in (4Q/02) for FY03 contract bringing first system delivery (2Q/04).

(U) Technical: NOT APPLICABLE

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
OPN BLI 425500 / LAMPS MK III Shipboard Equipment	0	0	0

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 22 of 24)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604212N / ASW & OTHER HELO DEVELOPMENT			H2463 / LAMPS MK III DATA LINK						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/FFP	Harris (Melbourne, FL)	8.900	7.377	11/00	14.568	11/01					30.845
Systems Engineering	SS/FFP	LMFS (Owego, NY)	2.237	1.000	11/00	6.000	11/01					9.237
SBIR Assessment				0.332								
Subtotal Product Development			11.137	8.709		20.568						40.082
Remarks:												
Software Development	SS/FFP	LMFS (Owego, NY)		0.600	11/00	0.700	11/01					1.300
Integrated Logistics Support	WX	NAWCAD, Pax River MD	0.030	0.060	11/00	0.104	11/01					
Subtotal Support			0.030	0.660		0.804						1.300
Remarks:												

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 23 of 24)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604212N / ASW & OTHER HELO DEVELOPMENT			PROJECT NUMBER AND NAME H2463 / LAMPS MK III DATA LINK					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD (Pax River, MD)				1.805	11/01					
Operational Test & Evaluation	WX	NAWCAD (Pax River, MD)				0.400	11/01					
Subtotal T&E						2.205						
Remarks:												
Contractor Engineering Support	RX	CSCI/SM&A/Walcoff/Averstar	0.700	0.715	12/00	0.440	12/01					1.855
Government Engineering Support	WX	NAWCAD (Pax River, MD)	1.278	2.475	11/00	1.046	11/01					
Program Management Support	RX	NAWCAD (Pax River, MD)	0.040	0.040	11/00	0.040	11/01					0.120
Travel	WX	NAWCAD (Pax River, MD)	0.040	0.020	11/00	0.020	11/01					
Subtotal Management			2.058	3.250		1.546						
Remarks:												
Total Cost			13.225	12.619		25.123						
Remarks:												

R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 24 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						0604214N / AV-8B AIRCRAFT					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	1,572.297	36.410	28.654	32.897							
H0652 AV-8B	1,498.417	0.708	6.188	26.875							
H2634 AV-8B (OSCAR)	73.880	35.702	22.466	6.021							
Quantity of RDT&E Articles	Not Applicable										
(U) A. - MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: (U) (H0652) The program provides AV-8B Design, Development, Integration and Test of the following improvements, including: The Engine Life Management Program (ELMP), Zero Retention Force (ZRF), Escape System, Joint Mission Planning System, and Tactical Aircraft Moving Map Capability. The Engine Life Management Program (ELMP) provides safety of flight and operational readiness improvements for the F402 Engine. The Escape System will qualify an improved ejection seat to reduce the risk of injury to aircrew. The Zero Retention Force Solenoid will be interchangeable with the SA-122 on all AV-8B models to provide reliable and dependable operation for in-flight selectability safe ordinance jettison. The Joint Mission Planning System (JMPS) is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system. The Self Contained Approach (SCA) will provide the capability to decelerate and hover Instrument Meteorological Conditions and will direct pilot to proper conditions vice situational guidance. The Tactical Aircraft Moving Map Capability (TAMMAC) is the avionics system that will replace the aging/obsolete AN/ASQ-196 digital map set and the AN/ASQ-194 data storage set presently installed. Advanced weapons coordination includes requirements and interface liaison with efforts such as Joint Stand-Off Weapon (JSOW), AIM-9X, Digital Multiple Carriage Bomb Rack (DMCBR), Advanced Expendables and Electronic Warfare suite upgrades. (U) (H2634) The program provides AV-8B Integration and Test of the following improvements, including: Open System Core Avionics Requirement (OSCAR), Joint Direct Attack Munition (JDAM), HAVEQUICK SINGARS, and Advanced Mission Computer (AMC). The Open System Core Avionics Requirement (OSCAR) is a form-fit-function replacement of the existing AV-8B mission and stores management computers that would capitalize on commercial-off-the-shelf hardware components and modular high order software language which will provide the necessary computer memory and throughput to integrate current modifications such as JDAM and HAVEQUICK/SINGARS. On 7 Oct 96 ASN (RD&A) directed the Program Manager to proceed immediately with the OSCAR initiative. On 4 Sep 98, Special Assistant to ASN(RDA) approved OSCAR program restructuring with capitalization on the Advanced Mission Computer (AMC). The title of the Operational Flight Program (OFP) software development effort which integrates the Joint Direct Attack Munitions (JDAM) and HAVEQUICK/SINGARS into the AV-8B was changed from C2.0 to OC 1.2 to reflect the change of effort in accordance with the ASN (RDA) approved AV-8B Open System Core Avionics Requirements (OSCAR) initiative. OSCAR completed first flight 29 May 1998. Successfully completed Iteration 4 and 5 flight testing and commenced Iteration 6 in first quarter FY01 for OC1.1. Starting flight testing of OC1.2 in fourth quarter of FY01 to continue through to third quarter FY02. (U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT to encompass engineering and manufacturing development of new end items prior to the production approval decision											

R-1 SHOPPING LIST - Item No. 96

UNCLASSIFIED

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 1 of 13)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604214N / AV-8B AIRCRAFT					H0652 / AV-8B					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	1,498.417	0.708	6.188	26.875							
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The program provides AV-8B Integration and Test of the following improvements, including: Engine Life Management Program (ELMP), Ejection Seat, Zero Retention Force (ZRF), Tactical Aircraft Moving Map Capability (TAMMAC) and Aircraft handling performance improvements. The Engine Life Management Program (ELMP) provides safety of flight and operational readiness improvements for the F402 Engine. The Escape System will qualify a new improved ejection seat to reduce the risk of injury to aircrew. The Zero Retention Force Solenoid will be interchangeable with the SA-122 on all AV-8B models to provide reliable and dependable operation for in-flight selectability safe ordinance jettison. The Joint Mission Planning System (JMPS) is required as part of the DON directed migration to a common Navy and Marine Corps mission planning system. The Self Contained Approach (SCA) will provide the capability to decelerate and hover Instrument Meteorological Conditions and will direct pilot to proper conditions vice situational guidance. The Tactical Aircraft Moving Map Capability (TAMMAC) is the avionics system that will replace the aging/obsolete AN/ASQ-196 digital map set and the AN/ASQ-194 data storage set presently installed. A/C Handling and performance is all engineering activities for development and design to support aircraft safety flight clearance and concept exploration to support POM objectives.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS (\$K):

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$0.038) Continued aircraft handling and performance investigations to improve safety and increase operational performance.
- (U) (\$0.670) Commenced design and development of the AV-8B Escape system to qualify an improved ejection seat design.

2. FY 2001 PLANS:

- (U) (\$0.250) Continue aircraft handling and performance investigations to improve safety and increase operational performance.
- (U) (\$2.998) Commence design, development, and integration of the AV-8B JMPS.
- (U) (\$2.940) Continue design, development, and testing of the Escape System Performance upgrade.

3. FY 2002 PLANS:

- (U) (\$3.058) Continue aircraft handling and performance investigations to improve safety and increase operational performance.
- (U) (\$7.623) Commence analysis and integration to improve safety of flight and operational readiness of the AV-8B Engine Life Management Program (ELMP).
- (U) (\$2.200) Continue design, development, and integration of the AV-8B JMPS.
- (U) (\$5.740) Commence design, development, and integration of the AV-8B Zero Retention Force (ZRF) solenoid Harrier Action Review Panel (HARP) initiative.
- (U) (\$8.250) Commence development and test of the SCA project.

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 13)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																																													
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H0652 / AV-8B																																														
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>FY2000</u></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: center;">0.759</td> <td style="text-align: center;">13.371</td> <td style="text-align: center;">20.219</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">-0.051</td> <td style="text-align: center;">-7.183</td> <td style="text-align: center;">6.656</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: center;">0.708</td> <td style="text-align: center;">6.188</td> <td style="text-align: center;">26.875</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 decrease of \$.051 million reflects a reprioritization of requirements within the Navy. The FY 2001 net decrease of \$7.183 million reflects a decrease of \$13.1 million for the Laser Spot Tracker, a decrease of \$0.020 million for reprioritization of Navy requirements, a decrease of \$0.002 million for a Congressional reduction, and a decrease of \$0.001 million for Congressional rescission offset by an increase of \$3.0 million for Realignment of Information Technology specifically for JMPS and an increase of \$2.940 million for the escape system performance upgrade. The FY 2002 net increase of \$6.652 million reflects an increase of \$2.2 million for Realignment of Information Technology specifically for JMPS, an increase of \$5.723 million for the Engine Life Management Program offset by a decrease of \$5.723 million to Laser Spot Tracker, and an increase of \$8.250 million for the Self Contained Approach offset by a decrease of \$7.000 million to level the AV-8B Weapons Integration RDTEN profile, a decrease of \$.094 million for reprioritization of requirements within the Navy, and a decrease of \$0.054 million for economic assumptions.</p> <p>(U) Schedule: Laser Spot Tracker has been deleted. Schedules have been added for JMPS beginning in FY01 and SCA and ELMP beginning in FY02.</p> <p>(U) Technical: N/A</p>						<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	(U) FY 2001 President's Budget:	0.759	13.371	20.219	(U) Adjustments from the President's Budget:	-0.051	-7.183	6.656	(U) FY 2002 President's Budget Submit:	0.708	6.188	26.875																												
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<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>																																						
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R-1 SHOPPING LIST - Item No. 95

UNCLASSIFIED

Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 3 of 13)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H0652 / AV-8B																				
<p>(U) D. ACQUISITION STRATEGY: All efforts under Aircraft Handling provide investigations and analysis of testing and flight clearance authorization necessary to assess overall system capability and integration of projects. Funding for the Escape System will qualify an improved ejection seat design and will be placed on a cost type fee contract awarded to UPCO and HARCO. Funding for the Engine Life Management Program (ELMP) will be placed on a cost type contract to Rolls Royce to address top readiness degraders, safety of flight issues, engine removal and mission failure drivers, assess life management program issues, and design fixes for any service revealed deficiencies. NAWCWD, China Lake will begin integration of the AVJMPS program and the SCA program in FY01. Funding for the ZRF solenoid will be placed on a cost type contract awarded to Raytheon to integrate the solenoid to provide safe ordnance jettison and selectable weapons.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td>1Q/01 AVJMPS PIR/IBR/PDR</td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td>3Q/01 AVJMPS CDR</td> <td>1Q/02 Begin ZRF Integration 1Q/02 SCA S/W Development</td> </tr> <tr> <td>(U) T&E Milestones</td> <td>4Q/00 Begin Ejection Seat DT-I</td> <td>1Q/01 Begin Ejection Seat DT-II 3Q/01 Ejection SeatV/V</td> <td>3Q/02 Initiate ASMET Testing</td> </tr> <tr> <td>(U) Contract Milestones</td> <td>1Q/00 Award Ejection Seat Contract</td> <td></td> <td>1Q/02 Award ELMP Contract</td> </tr> </tbody> </table> <p>* Not required for Budget Activities 1, 2, 3, and 6.</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	(U) Program Milestones		1Q/01 AVJMPS PIR/IBR/PDR		(U) Engineering Milestones		3Q/01 AVJMPS CDR	1Q/02 Begin ZRF Integration 1Q/02 SCA S/W Development	(U) T&E Milestones	4Q/00 Begin Ejection Seat DT-I	1Q/01 Begin Ejection Seat DT-II 3Q/01 Ejection SeatV/V	3Q/02 Initiate ASMET Testing	(U) Contract Milestones	1Q/00 Award Ejection Seat Contract		1Q/02 Award ELMP Contract
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																			
(U) Program Milestones		1Q/01 AVJMPS PIR/IBR/PDR																				
(U) Engineering Milestones		3Q/01 AVJMPS CDR	1Q/02 Begin ZRF Integration 1Q/02 SCA S/W Development																			
(U) T&E Milestones	4Q/00 Begin Ejection Seat DT-I	1Q/01 Begin Ejection Seat DT-II 3Q/01 Ejection SeatV/V	3Q/02 Initiate ASMET Testing																			
(U) Contract Milestones	1Q/00 Award Ejection Seat Contract		1Q/02 Award ELMP Contract																			

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Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 4 of 13)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604214N / AV-8B AIRCRAFT			H0652 / AV-8B						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-WD CHINA LAKE	19.236	2.999	10/00	5.461	10/01					
Award Fees	C/CPAF	VARIOUS	0.563			0.391	10/01					
Systems Engineering	WR	NAWC-AD PAX		0.675	10/00	1.337	10/01					
Systems Engineering	WR	NAWC-AD NADEP	11.104			0.505	10/01					
Contracts	Various	VARIOUS	8.887			3.786	11/01					
Contracts - Ejection Seat	C/CPFF	VARIOUS	0.670	1.969	10/00							
Contracts - Engine Life Management	Various	VARIOUS				5.723	12/01					
Contracts-ZRF	C/CPFF	Raytheon/Boeing				4.722	10/00					
Other FY98 & Prior Costs	Various	VARIOUS	1,360.849									
Subtotal Product Development			1,401.309	5.643		21.925						
Remarks: Prior year award fees earned was 96.6%												

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CLASSIFICATION:

[illegible]

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME H0652 / AV-8B					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC-WD CHINA LAKE	32.234	0.220	10/00	1.550	10/01					
Operational Test & Evaluation	WX	NAWC-WD CHINA LAKE	19.258	0.200	10/00							
Subtotal T&E			51.492	0.420		1.550						
Remarks:												
Contractor Engineering Support	RX	NAWC-AD PATUXENT RIV	46.324	0.125	10/00	0.100	10/01					
Subtotal Management			46.324	0.125		0.100						
Remarks:												
Total Cost			1,499.125	6.188		24.971						
Remarks:												

R-1 SHOPPING LIST - Item No. 96

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 13)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT					PROJECT NUMBER AND NAME H2634 / AV-8B (OSCAR)					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	73.880	35.702	22.466	6.021							
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Program provides AV-8B Integration and Test of the following improvements, including: Open System Core Avionics Requirement (OSCAR), Joint Direct Attack Munition (JDAM), HAVEQUICK/SINGGARS, and Advanced Mission Computer (AMC). OSCAR is a form-fit-function replacement of the existing AV-8B mission and stores management computers that would capitalize on commercial-off-the-shelf hardware components and modular high order software language which will provide the necessary computer memory and throughput to integrate current modifications such as JDAM and HAVEQUICK/SINGGARS. On 7 Oct 96 ASN (RD&A) directed the Program Manager to proceed immediately with the OSCAR initiative. On 4 Sep 98, Special Assistant to ASN(RDA) approved OSCAR program restructuring with capitalization on the Advanced Mission Computer (AMC). The title of the Operational Flight Program (OFP) software development effort which integrates the Joint Direct Attack Munitions (JDAM) and HAVEQUICK/SINGGARS into the AV-8B was changed from C2.0 to OC 1.2 to reflect the change of effort in accordance with the ASN(RDA) approved AV-8B Open System Core Avionics Requirements (OSCAR) initiative. OSCAR completed first flight 29 May 1998. Successfully completed Iteration 4 and 5 flight testing and commenced Iteration 6 in first quarter FY01 for OC1.1. Starting flight testing of OC1.2 in fourth quarter of FY01 to continue through to third quarter FY02.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$1.934) Continued integration and test software to the ARC-210 HAVEQUICK and SINGGARS waveform full functionality.
- (U) (\$33.768) Continued the Open System Core Avionics Requirements (OSCAR) initiative replacing the Mission Computer and Stores Management System with Commercial components and continued development of the common integrated Night Attack/Radar software to include integration of the 1000lb Joint Direct Attack Munitions (JDAM) weapon.

2. FY 2001 PLANS:

- (U) (\$1.000) Continue integration and test software to the ARC-210 HAVEQUICK and SINGGARS waveform full functionality.
- (U) (\$21.466) Continue the Open System Core Avionics Requirements (OSCAR) initiative replacing the Mission Computer and Stores Management System with Commercial components and continue development of the common integrated Night Attack/Radar software to include integration of the 1000lb Joint Direct Attack Munitions (JDAM) weapon.

3. FY 2002 PLANS:

- (U) (\$6.021) Continue the Open System Core Avionics Requirements (OSCAR) initiative replacing the Mission Computer and Stores Management System with Commercial components and continue development of the common integrated Night Attack/Radar software to include integration of the 1000lb Joint Direct Attack Munitions (JDAM) weapon.

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 8 of 13)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																																							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H2634 / AV-8B (OSCAR)																																								
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th><u>FY2000</u></th> <th><u>FY2001</u></th> <th><u>FY2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td>37.628</td> <td>24.690</td> <td>6.128</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td>-1.926</td> <td>-2.224</td> <td>-0.107</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td>35.702</td> <td>22.466</td> <td>6.021</td> </tr> </tbody> </table> <p style="margin-top: 20px;">CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net decrease of \$1.926 million reflects a decrease of \$1.255 million for reprioritization of requirements within the Navy, a decrease of \$0.524 million for a Small Business Innovative Research assessment, and a decrease of \$0.147 million for a Congressional rescission. The FY 2001 net decrease of \$2.224 million reflects a decrease of \$1.997 million for reprioritization of requirements within the Navy and a decrease of \$0.227 million for a Congressional reduction. The FY 2002 net decrease of \$.107 million reflects a decrease of \$0.037 million for reprioritization of requirements within the Navy decrease of \$0.081 million for economic assumptions, and a net increase of \$.011 million for federal technologies trans</p> <p>(U) Schedule: N/A</p> <p>(U) Technical: N/A</p> <p style="margin-top: 20px;">(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th><u>Line Item No. & Name</u></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th><u>To Complete</u></th> <th><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>APN BLI 051400, AV-8B Series Modificatio</td> <td>52.3</td> <td>114.3</td> <td>49.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="margin-top: 20px;">Related RDT&E: N/A</p>						<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	(U) FY 2001 President's Budget:	37.628	24.690	6.128	(U) Adjustments from the President's Budget:	-1.926	-2.224	-0.107	(U) FY 2002 President's Budget Submit:	35.702	22.466	6.021	<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	APN BLI 051400, AV-8B Series Modificatio	52.3	114.3	49.5							
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Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 9 of 13)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604214N / AV-8B AIRCRAFT	PROJECT NUMBER AND NAME H2634 / AV-8B (OSCAR)																										
<p>(U) D. ACQUISITION STRATEGY: PEO(A) ADM Ser DPEO(A)-ACQ2/015-97 dated 6 March 1997 approved the MSII acquisition strategy for OSCAR as an ACAT IVT program. OSCAR avionics CDR was held in January 1998 and completed first flight 29 May 1998. Using the NAWC-WD CPAF contract, funds will be used for basic design definition, drawing development, and OFP development and test Twelve Mission System Computers and fourteen Warfare Management Computer engineering models have been procured for laboratory and flight test. The NAWC-WD/Boeing follow-on CPAF Contract was awarded on 16 December 1998. The period of performance will be for five years based on the need to complete Open System Core Avionics Requirement (OSCAR) and begin OC1.3. As directed during 4 September 1998 program restructuring, an ACAT redesignation letter was approved changing the OSCAR program from an ACAT IVT program to an ACAT II program. The schedule was revised due to impact of AV-8B F402-RR-408 engine red stripe which resulted in a 5-month developmental test impact delay. Revised schedule has been approved and is currently being executed, however the program requires an additional \$12.4M to complete the program with full functionality.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>2Q/00 OC1.1 Begin Integration</td> <td>3Q/01 Begin OC1.2 Integration</td> <td>1Q/02 HW LRIP Decision</td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td>4Q/01 Begin DT OC1.1</td> <td>3Q/02 OC1.2 DT Complete 3Q/02 OC1.2 OTRR 3Q/02 OC1.2 Integration Complete 4Q/02 Begin OT OC1.1</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones					(U) Engineering Milestones	2Q/00 OC1.1 Begin Integration	3Q/01 Begin OC1.2 Integration	1Q/02 HW LRIP Decision		(U) T&E Milestones		4Q/01 Begin DT OC1.1	3Q/02 OC1.2 DT Complete 3Q/02 OC1.2 OTRR 3Q/02 OC1.2 Integration Complete 4Q/02 Begin OT OC1.1		(U) Contract Milestones				
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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604214N / AV-8B AIRCRAFT			PROJECT NUMBER AND NAME H2634 / AV-8B (OSCAR)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC-WD CHINA LAKE	13.472	0.228	10/00	1.270	10/01					
Operational Test & Evaluation	WX	NAWC-WD CHINA LAKE	2.503	0.188	10/00	1.311	10/01					
Subtotal T&E			15.975	0.416		2.581						
Remarks:												
Subtotal Management			0.000	0.000		0.000						
Remarks:												
Total Cost			109.582	22.466		6.021						
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 13 of 13)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604215N, Standards Development					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	117.685	74.391	100.740	66.748							
E2310/Flight Polynomials	0.000	0.279	0.344	0.355							
E2311/Stores Planning and Weaponeering Module	0.000	7.034	8.497	7.565							
E2312/Common Helicopters	0.000	1.349	1.952	2.739							
S1857/Calibration Standards	0.000	4.499	7.503	1.653							
W0572/Joint Services/Naval Standard Avionics Components and Subsystems	117.685	61.230	82.444	54.436							
Quantity of RDT&E Articles	49	91	43	40							
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
Project S1857, Calibration Standards: This project is a Navy-wide program to develop required calibration standards (hardware in all major measurement technology areas). It funds Navy lead-service responsibilities in the DOD metrology RDT&E program.											
Project E2310, Flight Polynomials: The Navy - Portable Flight Planning Software (N-PFPS) is the basic flight planning system for the Navy and Marine Corps. One of the fundamental planning functions of any automated aviation mission planner is the ability to calculate fuel required and performance available corrected for both the aircraft's configuration (weight, drag, speed, etc.) and the environmental factors (altitude, wind, pressure, humidity, etc.) In order to provide accurate performance calculations, performance polynomials (drop-in polynomials) reflecting the performance delineated in the approved NATOPS manuals must be developed, implemented and maintained for each supported type/model/series aircraft. The following type/model/series aircraft are supported by this PE: F/A-18 (400), F/A-18 (402), C-2R, E-2C (Block II), F-14 B/D, AH-1W, UH-1N, CH-46E, H-60F/H, S-3B, EA-6B, AV-8B (406), AV-8 (408), T-45, and KC-130 F/R/T. The developed drop-in performance polynomials will initially be implemented in Naval Portable Flight Planning Software (N-PFPS).											
Project E2311, Stores Planning and Weaponeering Module: The Naval Stores Planning and Weaponeering (NSPW) application is an incrementally developed software product that will provide a certified unit level weaponeering capability for Naval aircraft in the Joint Mission Planning Segment (JMPS). NSPW will provide current planning results for specific aircraft type and model that include store/weapon carriage authorizations, restrictions and limitations; store/weapon delivery restrictions and limitations (including safe-escape aspects of the planned delivery profile); and will provide mandatory weapons employment planning information including weapons optimization. Selected functions of the Automated Tactical Manual Supplement (ATACS) will be rehosted in a Windows NT environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and mission planning functions to comprise NSPW. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NSPW as a stand alone product, prior to migration to JMPS.											

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 26)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVYBA-5	R-1 ITEM NOMENCLATURE 0604215N, Standards Development	
<p>Project E2312, Common Helicopters: Automated mission planning systems to date have been developing targeting the planning requirements for fixed-wing aircraft, while the unique planning requirements for helicopters have not been addressed. The unique and enhanced automated mission planning requirements that must be developed and implemented for helicopters include: data loading, an enhanced route editor (serpentine routing, hover, etc.) manipulation of higher fidelity (smaller scale) maps and imagery, enhanced performance tools (performance in and out of ground effect, performance degradation due to atmospheric conditions & elevation), and enhanced fidelity of threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS). The fully developed and Fleet released common helicopter functionality will migrate to the Joint Mission Planning Segment (JMPS) after JMPS initial fielding.</p> <p>Project W0572, Joint Services/Navy Standard Avionics Components and Subsystems: This project provides for the identification, design, development, test, evaluation and qualification of standard avionics for Navy use, and wherever practicable, use across all Services and Foreign Military Sales. Such air combat electronics developments include communications, navigation, flight avionics, safety systems, and flight mission information systems for both forward fit and retrofit aircraft. These efforts continue to maintain federated systems while encouraging transition of procurements to support a modular system for enhanced performance and affordability. Consideration is given up front to reduce acquisition costs through larger procurement quantities that satisfy multi-aircraft customer requirements and that reduce life cycle costs in the areas of reliability, maintainability, and training. Several examples of past successful tasks under this project include the Standard Central Air Data Computer, Solid State Barom Altimeter, and Downed Aircraft Location System, jointly developed with the Air Force and Army and currently installed on numerous Navy, Air Force and Army aircraft. This project also funds Navy chairma and participation in the Joint Services Review Committee (JSRC) for Avionics Standardization. The RDT&E Articles include Tactical Aircraft Moving Map Capability (TAMMAC) Engineering & Manufacturing Development (EMD) units, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) EMD units, Advanced Mission Computer & Displays (AMC&D) EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, Fibre Channel Network Switches, and technology roll kits.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under ENGINEERING & MANUFACTURING DEVELOPMENT because they encompass engineering and manufacturing development of new end-items prior to production approval decision.</p>		

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Exhibit R-2, RDTEN Budget Item Justification
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 064215N Standards Development				PROJECT NUMBER AND NAME E2310 Flight Polynomials					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		0.279	0.344	0.355							0.978
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: One of the fundamental planning functions of any automated aviation mission planner is the ability to calculate fuel required and performance available corrected for both the aircraft's configuration (weight, drag, speed, etc.) and the environmental factors (altitude, wind, pressure, humidity, etc.) In order to provide accurate performance calculations, flight performance modules reflecting the performance delineated in the approved NATOPS manuals must be developed, implemented and maintained for each supported type/model/series aircraft. The developed flight performance modules will initially be implemented in Naval Portable Flight Planning Software (N-PFPS) and will eventually migrate to JMPS.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <ol style="list-style-type: none"> (U) FY 2000 ACCOMPLISHMENTS: - (U) (\$.279) Continued the development, certification, and release of flight performance modules. The following flight performance modules were developed KC-130F/R/T and P-3C. (U) FY 2001 PLAN: - (U) (\$.344) Continue the development, certification, and release of flight performance modules. The following flight performance modules are planned; E-2C and SH-60B. FY 2002 PLAN: - (U) (\$.355) Continue the development, certification, and release of flight performance modules. The following flight performance modules are planned: C-130J and T-34C. 											

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Exhibit R-2a, RDTE Project Justification
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EXHIBIT R-2a, RDT&E Project Justification				DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 064215N Standards Development		PROJECT NUMBER AND NAME E2310 Flight Polynomials	

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	0.286	0.347	0.355
(U) Adjustments from the President's Budget:	-0.007	-0.003	0.000
(U) FY 2002 President Budget Submit:	0.279	0.344	0.355

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 decrease of \$.007 million reflects a reprioritization of requirements within the Navy.
The FY 2001 decrease of .003 million reflects a Congressional reduction.

(U) Schedule: The 2Q/02 JMPS OPEVAL has been redesignated as a 4Q/02 JMPS Version 1 (JV1) Operational Test (OT). The 4Q/02 JMPS IOC has been redesignated as a 2Q/03 JMPS Version 1 (JV1) IOC. NPFPS Version 3.1 was delayed from 2Q/00 to 3Q/00. NPFPS Version 3.2 was delayed from 2Q/01 to 3Q/01.

(U) Technical: Not applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 287600 TAC A/C Mission Planning System (OPN)	20.457	11.771	13.411							Continuing

Related RDT&E:

(U) P.E. 0604231N (Mission Planning)

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<p>(U) D. ACQUISITION STRATEGY: This is a co-operative development between the USN and USAF.</p> <p>(U) E. SCHEDULE PROFILE</p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> NPFPS Version 3.1</td> <td>3Q/00 Release</td> <td></td> <td></td> <td></td> </tr> <tr> <td> NPFPS Version 3.2</td> <td></td> <td>3Q/01 Release</td> <td></td> <td></td> </tr> <tr> <td> JMPS Version 1 (JV1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> JMPS Post Version 1(JC1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> JMPS Force Level Planning</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> JMPS Responsive Planning</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td>2Q/00 TAMPS 6.2.1 OPEVAL</td> <td></td> <td>4Q/02 JMPS Version 1 OT</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD</td> <td>1Q/02 JMPS FOLLOW-ON CONTRACT AWARD</td> <td></td> </tr> </tbody> </table>						<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones					NPFPS Version 3.1	3Q/00 Release				NPFPS Version 3.2		3Q/01 Release			JMPS Version 1 (JV1)					JMPS Post Version 1(JC1)					JMPS Force Level Planning					JMPS Responsive Planning					(U) Engineering Milestones					(U) T&E Milestones	2Q/00 TAMPS 6.2.1 OPEVAL		4Q/02 JMPS Version 1 OT		(U) Contract Milestones		3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD	1Q/02 JMPS FOLLOW-ON CONTRACT AWARD	
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:				
								June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		064215N Standards Development				E2311 Naval Stores Planning and Weaponneering						
COST (\$ in Millions)		Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			7.034	8.497	7.565						Continuing	Continuing
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Stores Planning and Weaponneering (NSPW) application, previously known as Stores Planning and Weaponneering Module (SPWM), is a incrementally developed software product that will provide a certified unit level weaponneering capability for Navy and Marine Corp aircraft in the Joint Mission Planning System (JMPS). NSPW will provide current planning results for specific aircraft type and model that include store/weapon carriage authorizations, restrictions and limitations; store/weapon delivery restrictions and limitations (including safe-escape aspects of the planned deli profile), and will provide mandatory weapons employment planning information including weapons optimization. Selected functions of the Automated Tactical Manual Supplement (ATACS) will be rehosed in a Windows NT environment and integrated with Joint Munitions Effectiveness Manual (JMEM) software, and other mission planning functions to comprise the NSPW. F/A-18A/B/C/D is the first platform to be introduced in the first increment of NSPW. Initially, as a standalone product, later the system will be migrated to JMPS.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none">- (U) (\$2.157) Concluded NSPW Elaboration Phase by establishing an articulation baseline and conducting an elaboration status review. Presented NSPW constructive readiness review for FA18A/B/C/D stand alone product.- (U) (\$3.427) Began NSPW Construction Phase. Two constructive elaboration's were conducted in FY00 with a hardware review.-(U) (\$1.450) Developed and released ATACS version 2.1. <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none">-(U) (\$6.539) Continue NSPW Construction Phase. Scheduled to complete NSPW Iterations 5, 6 and 7.- (U) (\$.290) Initiate analysis and design for load and load validation for EA-6B aircraft.- (U) (\$1.502) Develop and release ATACS version 2.2.-(U) (\$.166) Portion of extramural program reserved for Small Business Innovation Research Assessment in accordance with 15 USC 68. <p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none">-(U) (\$2.583) Continue NSPW Construction Phase including FQT and certification testing on F/A-18A/B/C/D stand alone product. Introduce NSPW application to Fleet users at the conclusion of the NSPW Transition Phase.-(U))\$3.548) Initiate development of the F/A-18E/F NSPW application.-(U) (\$.917) Provide essential updates to ATACS until NSPW is released.-(U) (\$.515) Initiate analysis and design of loading capability for JMPS Version 1 aircraft (CH-46, CH53D, CH-53E, HH-60H, KC-130, T-45, UH-1, SH-60R, and AH-1).												

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 6 of 26)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																																							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 064215N Standards Development	PROJECT NUMBER AND NAME E2311 Navy Stores Planning and Weaponeering																																								
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS (Cont):</p> <p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; margin-left: 40px;"> <thead> <tr> <th></th> <th style="text-align: right;">FY2000</th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">7.391</td> <td style="text-align: right;">8.589</td> <td style="text-align: right;">7.743</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-0.357</td> <td style="text-align: right;">-0.092</td> <td style="text-align: right;">-0.178</td> </tr> <tr> <td>(U) FY 2002 President Budget Submit:</td> <td style="text-align: right;">7.034</td> <td style="text-align: right;">8.497</td> <td style="text-align: right;">7.565</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY2000 net decrease of \$.357 million reflects a decrease of \$.004 million for a reprioritization of requirements within the Navy, a decrease of \$.029 for a Congressional Rescission and a decrease of \$.324 million for a Small Business Innovative Research assessment. The FY2001 net decrease of \$.092 million reflects a decrease of \$.013 million for reprioritization of requirements within the Navy and a decrease of \$.079 for a Congressional Rescission . The FY2002 net decrease of \$.180 million reflects a decrease of \$.034 million for reprioritization of requirements within the Navy and a decrease of \$.146 million for Economic Assumptions.</p> <p>(U) Schedule: NSPW Fleet Qualification and Certification Tests added to the 2 & 3 Q/02 causes the NSPW Version 1.0 Release to change from the 2Q/02 to 4Q/02.</p> <p>(U) Technical: Not Applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; margin-left: 40px;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> <th style="text-align: right;"><u>FY 2003</u></th> <th style="text-align: right;"><u>FY 2004</u></th> <th style="text-align: right;"><u>FY 2005</u></th> <th style="text-align: right;"><u>FY 2006</u></th> <th style="text-align: right;"><u>FY 2007</u></th> <th style="text-align: right;"><u>To Complete</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>BLI 287600 TAC A/C Mission Planning System (OPN)</td> <td style="text-align: right;">20.457</td> <td style="text-align: right;">11.771</td> <td style="text-align: right;">13.411</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table> <p style="margin-left: 40px;">Related RDT&E: (U) P.E. 0604231N (Mission Planning)</p>						FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	7.391	8.589	7.743	(U) Adjustments from the President's Budget:	-0.357	-0.092	-0.178	(U) FY 2002 President Budget Submit:	7.034	8.497	7.565	<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	BLI 287600 TAC A/C Mission Planning System (OPN)	20.457	11.771	13.411							Continuing
	FY2000	FY2001	FY2002																																							
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EXHIBIT R-2a, RDT&E Project Justification		DATE:																																																		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																																																		
RDT&E, N / BA-5	064215N Standards Development	E2311 Navy Stores Planning and Weaponneering																																																		
<p>(Related RDT&E (U) P.E. 0604231N Mission Planning</p> <p>(U) D. ACQUISITION STRATEGY: Navy Stores Planning and Weaponneering (NSPW) software applications are being built by a software development team composed of government and contractor entities. Engineers provide domain expertise in the areas of platform specific stores compatibility and weapons separation, load validation, drag counts, fuzing, delivery and safe escape, unguided trajectory modeling, guided weapons models, weapon effects, and aerodynamic flutter to the software development team. NSPW management and the test team for IV&V and Certification Testing are also combined teams of United State Government (USG) and contractor entities. Contractor efforts are procured predominately through fixed-price GSA or BPA contracts.</p> <p>(U) E. SCHEDULE PROFILE</p> <table><thead><tr><th></th><th><u>FY 2000</u></th><th><u>FY 2001</u></th><th><u>FY 2002</u></th><th><u>TO COMPLETE</u></th></tr></thead><tbody><tr><td>(U) Program Milestones</td><td></td><td></td><td></td><td></td></tr><tr><td>ATACS Version 2.1</td><td>2Q/00 Release</td><td></td><td></td><td></td></tr><tr><td>ATACS Version 2.2</td><td></td><td>2Q/01 Release</td><td></td><td></td></tr><tr><td>NSPW Version 1.0</td><td></td><td></td><td>4Q/02 Release</td><td></td></tr><tr><td>NSPW Version 2.0</td><td></td><td></td><td></td><td></td></tr><tr><td>(U) Engineering Milestones</td><td></td><td></td><td></td><td></td></tr><tr><td>(U) T&E Milestones</td><td></td><td></td><td></td><td></td></tr><tr><td>(U) Contract Milestones</td><td></td><td></td><td></td><td></td></tr><tr><td>NSPW</td><td>2Q/00 DCS GSA Contract Award</td><td>2Q/01 DCS GSA Contract Award</td><td>2Q/02 DCS GSA Contract Award</td><td></td></tr></tbody></table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones					ATACS Version 2.1	2Q/00 Release				ATACS Version 2.2		2Q/01 Release			NSPW Version 1.0			4Q/02 Release		NSPW Version 2.0					(U) Engineering Milestones					(U) T&E Milestones					(U) Contract Milestones					NSPW	2Q/00 DCS GSA Contract Award	2Q/01 DCS GSA Contract Award	2Q/02 DCS GSA Contract Award	
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Exhibit R-3 Cost Analysis (page 1)							DATE:					
APPROPRIATION/BUDGET ACTIVITY							June 2001					
RDT&E, N / BA-5			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			064215N STANDARD DEVELOPMENT			E2311 NAVY STORES PLANNING AND WEAPONNEERING						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Development	WX	NAWCAD, Pax River MD	7.489	2.687	11/00	2.741	11/01			Continuing	Continuing	
Primary Development	GSA/FP	DCS Inc., Pax River MD	5.955	2.602	01/01	2.818	01/02			Continuing	Continuing	
Systems Engineering	Various	Various	3.231	1.274	11/00	0.280	11/01			Continuing	Continuing	
Subtotal Product Development			16.675	6.563		5.839				Continuing	Continuing	
Remarks:												
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 064215N STANDARD DEVELOPMENT			PROJECT NUMBER AND NAME E2311 NAVY STORES PLANNING AND WEAPONNEERING						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	2.114	1.264	11/00	1.298	11/01			Continuing	Continuing	
Subtotal T&E			2.114	1.264		1.298				Continuing	Continuing	
Remarks:												
Program Management Support	RX	Various	1.299	0.357	11/00	0.280	11/01			Continuing	Continuing	
Travel	WX	NAWCAD, Pax River MD	0.466	0.147	11/00	0.146	11/01			Continuing	Continuing	
SBIR Assessment				0.166								
Subtotal Management			1.765	0.670		0.426				Continuing	Continuing	
Remarks:												
Total Cost			20.554	8.497		7.563				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification								DATE:				
		June 2001										
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		064215N Standards Development				E2312 Common Helicopters						
COST (\$ in Millions)		Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			1.349	1.952	2.739							6.040
RDT&E Articles Qty												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Automated mission planning systems to date have been developed targeting the planning requirements for fixed-wing aircraft, while the unique planning requirements for helicopters have not been addressed. The unique and enhanced automated mission planning requirements that must be developed and implemented for helicopters include: data loading, an enhanced route editor (serpentine routing, hover, etc.) manipulation of higher fidelity (smaller scale) maps and imagery, enhanced performance tools (performance in and out of ground effect, performance degradation due to atmospheric conditions & elevation), and enhanced fidelity of threat analyses. The following type/model/series aircraft are supported by this PE: AH-1W, UH-1N, H-46D/E, H-53D/E, H-60B/F/H/R, and V-22. The developed common helicopter functionality will initially be implemented in Naval Portable Flight Planning Software (N-PFPS). The fully developed and Fleet released common helicopter functionality will migrate to the Joint Mission Planning System (JMPS).</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none">(U) (\$1.349) Commenced development of common helicopter functionality as identified in the FY-99 requirements analyses. Released version 3.1 of N-PFPS. <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none">(U) (\$1.952) Continue development of Common Helicopter functionality. <p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none">(U) (\$2.738) Continue development of Common Helicopter functionality.												

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 11 of 26)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 064215N Standards Development	PROJECT NUMBER AND NAME E2312 Common Helicopters

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	1.434	1.973	2.745
(U) Adjustments from the President's Budget:	-0.085	-0.021	-0.006
(U) FY 2002 President Budget Submit:	1.349	1.952	2.739

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY2000 net decrease of \$.085 million reflects decrease of \$.079 million for a Small Business Innovative Research assessment and a decrease of \$.006 million for a Congressional Rescission.
The FY2001 net decrease of \$.021 million reflects a decrease of \$.003 million for reprioritization of requirements within the Navy and a decrease of \$.018 million for a Congressional Rescission.
The FY2002 decrease of \$.007 million reflects a reprioritization of requirements within the Navy.

((U) Schedule: The 2Q/02 JMPS OPEVAL has been redesignated as a 4Q/02 JMPS Version 1 (JV1) Operational Test (OT). The 4Q/02 JMPS IOC has been redesignated as a 2Q/03 JMPS Version 1 (JV1) IOC. NPFPS Version 3.1 was delayed from 2Q/00 to 3Q/00. NPFPS Version 3.2 was delayed from 2Q/01 to 3Q/01.

(U) Technical: Not Applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 287600 TAC A/C Mission Planning System (OPN)	20.457	11.771	13.411							

Related RDT&E:
(U) P.E. 0604231N (Mission Planning)

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EXHIBIT R-2a, RDT&E Project Justification		DATE:																																																							
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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																																																							
RDT&E, N / BA-5	064215N Standards Development	E2312 Common Helicopters																																																							
<p>(Related RDT&E (U) P.E. 0604231N Mission Planning (E2213)</p> <p>(U) D. ACQUISITION STRATEGY: NOT APPLICABLE</p>																																																									
<p>(U) E. SCHEDULE PROFILE</p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> NPFPS Version 3.1</td> <td>3Q/00 Release</td> <td></td> <td></td> <td></td> </tr> <tr> <td> NPFPS Version 3.2</td> <td></td> <td>3Q/01 Release</td> <td></td> <td></td> </tr> <tr> <td> JMPS Version 1 (JV1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> JMPS Post Version 1(JC1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> JMPS Force Level Planning</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> JMPS Responsive Planning</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td>2Q/00 TAMPS 6.2.1 OPEVAL</td> <td></td> <td>4Q/02 JMPS Version 1 OT</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD</td> <td>1Q/02 JMPS FOLLOW-ON CONTRACT AWARD</td> <td></td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones					NPFPS Version 3.1	3Q/00 Release				NPFPS Version 3.2		3Q/01 Release			JMPS Version 1 (JV1)					JMPS Post Version 1(JC1)					JMPS Force Level Planning					JMPS Responsive Planning					(U) Engineering Milestones					(U) T&E Milestones	2Q/00 TAMPS 6.2.1 OPEVAL		4Q/02 JMPS Version 1 OT		(U) Contract Milestones		3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD	1Q/02 JMPS FOLLOW-ON CONTRACT AWARD	
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(U) Contract Milestones		3Q/01 JMPS POST-V1 (JC1) CONTRACT AWARD	1Q/02 JMPS FOLLOW-ON CONTRACT AWARD																																																						

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Exhibit R-2a, RD TEN Project Justification
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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			064215N STANDARD DEVELOPMENT			E2312 Common Helicopters						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Development	MP	Eglin AFB, Florida	1.677	0.474	11/00						2.151	0.474
Primary Development	C/CPAF	Logicon, CA.		0.862	04/01	2.099	11/01			Continuing	Continuing	
Subtotal Product Development			1.677	1.336		2.099				Continuing	Continuing	
Remarks:												
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 064215N STANDARD DEVELOPMENT			PROJECT NUMBER AND NAME E2312 Common Helicopters						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Government Engineering Support	WX	NAWCAD, Pax River MD	0.100	0.181	11/00	0.200	11/01			Continuing	Continuing	
Program Management Support	RX	Various		0.335	11/00	0.340	11/01			Continuing	Continuing	
Travel	WX	NAWCAD, Pax River MD		0.100	11/00	0.099	11/01			Continuing	Continuing	
Subtotal Management			0.100	0.616		0.639				Continuing	Continuing	
Remarks:												
Total Cost			1.777	1.952		2.738				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development				PROJECT NUMBER AND NAME S1857, Calibration Standards					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	0.000	4.499	7.503	1.653						Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
This project provides the engineering development of measurement reference/calibration standards (hardware) required to ensure measurement accuracy in support/maintenance of new advance technology weapon systems and associated support equipment. There individual tasks have been assigned to the Navy as lead-service responsibilities as part of a Joint Service/DOD progra

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$2.767) 13 New Projects: Begin development of 9 calibration standards (hardware) in support of shipboard gage calibration, electronic maintenance, composite material testing, optical systems, laser power measurements, infrared imaging system (8 -12 um), infrared target designators (3 – 5 um), AN/UPM-155 pulse characterization, and Radar Cross Section measurements. Begin development (to 50% completion and continue in FY 01) of 4 modeling and simulation projects to develop tools for reducing the cost of maintenance and optimizing test decisions.
- (U) (\$.700) Complete the development of 3 calibration standards (hardware) in support of laser tracking systems, target designators, and radar power measurements.
- (U) (\$1.032) Continue development of 5 calibration standards (hardware) in support of underwater acoustic systems, Infrared (1.52u) systems, fiber optic systems, electromagnetic vulnerability measurements, and multi-function electrical test equipment.

2. FY 2001 PLANS:

- (U) (\$4.299) 13 New Projects: Begin development of 13 calibration standards (hardware) in support of microwave power measurements, broadband communications, fuel measurements systems, FLIR systems, electronic test systems, chemical/biological sensors, laser power measurements, eye safe laser power measurements, Watt Meter calibrators, missile guidance systems, capacitance measurement systems, fiber optic hydropones and new technology for reduced crew size.

Continue work on 17 projects begun in previous years as follows:

- (U) (\$1.069) Complete 5 Projects : 5 calibration standards (hardware) in support of electromagnetic vulnerability measurements, underwater acoustic systems, Infrared (1.52u) systems, electronic maintenance, and AN/UPM-155 pulse characterization.
- (U) (\$2.135) Continue development of 12 calibration standards (hardware) in support of fiber optic systems, shipboard gage calibration, composite material testing, laser power measurements, multifunction electrical test equipment, infrared imaging systems (8 - 12 um), infrared target designators (3 - 5 m) and Radar Cross Section measurements; 4 modeling and simulation projects begun in FY00 to develop tools for reducing the cost of maintenance and optimizing test decisions.

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 16 of 26)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																																																															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604215N, Standards Development	PROJECT NUMBER AND NAME S1857, Calibration Standards																																																																
<p>3. FY 2002 PLAN:</p> <p>(U) (\$.661) Complete 14 calibration standards (hardware) in support of fiber optic systems, Watt Meter calibrators, shipboard gage calibration, composite material testing, microwave power measurements, laser power measurements, fiber optic hydrophones, infrared imaging systems (8 – 12 um), and infrared target designators (3 – 5 um) 4 modeling and simulation projects begun in FY00 to develop tools for reducing the cost of maintenance and optimizing test decisions.</p> <p>(U) (\$.992) Continue development of 11 calibration standard (hardware) in support of radar cross section measurements, laser power measurements, optical systems, composite material testing, broadband communication systems, fuel measurement systems, FLIR systems, multifunction electrical test equipment, chemical/biological sensors, missile guidance systems, new technology for reduced crew size, and capacitance measurement systems.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: right;">FY2000</th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">4.552</td> <td style="text-align: right;">1.572</td> <td style="text-align: right;">1.738</td> </tr> <tr> <td>(U) Adjustments from President's budget:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Minor Technical Adjustments</td> <td style="text-align: right;">-0.004</td> <td style="text-align: right;">-0.069</td> <td style="text-align: right;">-0.022</td> </tr> <tr> <td>Congressional Increase</td> <td></td> <td style="text-align: right;">2.000</td> <td></td> </tr> <tr> <td>Congressional Increase</td> <td></td> <td style="text-align: right;">4.000</td> <td></td> </tr> <tr> <td>Across-the-Board Reduction</td> <td style="text-align: right;">-0.018</td> <td></td> <td></td> </tr> <tr> <td>Mid-year Adj.</td> <td style="text-align: right;">-0.031</td> <td></td> <td></td> </tr> <tr> <td>Rate Changes</td> <td></td> <td></td> <td style="text-align: right;">-0.063</td> </tr> <tr> <td>(U) FY 2002 PRES Budget Submit:</td> <td style="text-align: right;">4.499</td> <td style="text-align: right;">7.503</td> <td style="text-align: right;">1.653</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: See Above.</p> <p>(U) Schedule: Not applicable.</p> <p>(U) Technical: Not applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> <th style="text-align: right;">FY 2006</th> <th style="text-align: right;">FY 2007</th> <th style="text-align: right;">To Complete</th> <th style="text-align: right;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>Not applicable.</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table> <p>(U) D. ACQUISITION STRATEGY: Not applicable.</p> <p>(U) E. SCHEDULE PROFILE: Not applicable.</p>						FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	4.552	1.572	1.738	(U) Adjustments from President's budget:				Minor Technical Adjustments	-0.004	-0.069	-0.022	Congressional Increase		2.000		Congressional Increase		4.000		Across-the-Board Reduction	-0.018			Mid-year Adj.	-0.031			Rate Changes			-0.063	(U) FY 2002 PRES Budget Submit:	4.499	7.503	1.653	<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	Not applicable.										
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Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604215N, Standards Development			S1857, Calibration Standards						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWC NWAS	6.198	6.454	10/00	1.241	10/01			Continuing	Continuing	
Systems Engineering	WR	NSWC NWAS	1.983	1.019	10/00	0.392	10/01			Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Award Fees											0.000	
Subtotal Product Development			8.181	7.473		1.633				Continuing	Continuing	
Remarks:												
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N, Standards Development				PROJECT NUMBER AND NAME S1857, Calibration Standards					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Travel		NSWC NWAS	0.050	0.030	10/00	0.020	10/01			Continuing	Continuing	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.050	0.030		0.020				Continuing	Continuing	
Remarks:												
Total Cost			8.231	7.503		1.653				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604215N, Standards Development					W0572, Joint Services/Navy Standard Avionics Components and Subsystems					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	117.685	61.230	82.444	54.436						Continuing	Continuing
RDT&E Articles Qty	49	91	43	40						0	
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
The Joint Services/Navy Standard Avionics Components and Subsystems project provides for the identification, design, development, test, evaluation and qualification of standard avionics and mandatory safety improvements for Navy use, and wherever practicable, use across all services. Standard avionics systems under development include the Ground Proximity Warning System (GPWS) for CAT II, Terrain Awareness Warning System (TAWS), Low Probability of Intercept Altimeter (LPIA), Tactical Aircraft Moving Map Capability (TAMMAC), Midair Collision Avoidance System (MCAS), Communication Navigation Surveillance Air Traffic Management (CNS/ATM), and Advanced Mission Computer & Displays (AMC&D). Participation in Human Factors Quality Management Board (HFQMB) ensures Navy safety upgrades and mandatory safety improvements for naval aircraft.											
The RDT&E Articles include Tactical Aircraft Moving Map Capability (TAMMAC) Engineering & Manufacturing Development (EMD) units, Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) EMD units, AMC&D EMD units which include Display Processors and Mission Processors, Display Heads, 8 x 10 displays, Fiber Channel Switches, and technology roll kits.											
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:											
1. FY 2000 ACCOMPLISHMENTS:											
- (U) (\$.298) Safety: Completed operational flight test and deficiency corrections of the GPWS CAT II in the F/A-18 C/D (15C OFP) aircraft. Commenced and completed GPWS CAT II OT (15C OFP).											
- (U) (\$ 1.591) Completed DT/OT-IIA for the LPIA program. Commenced and completed TECHEVAL for the LPIA program. Commenced OPEVAL.											
- (U) (\$ 3.482) Completed TAMMAC TECHEVAL for F/A-18 and TAMPS integration efforts and conducted OPEVAL on TAMMAC program.											
- (U) (\$44.973) Awarded development contract and conducted hardware integration, design verification testing/qualification, and reliability development testing (RDT) of baseline AMC&D for the F/A-18E/F and AV-8B programs. Began DT-IIA1 for F/A-18 and DT-IIB1 for AV-8B. Began development of 8 x 10 display and Fibre Channel Network Switch phase of the program for F/A-18 E/F.											
- (U) (\$ 1.150) Continued to support the Joint Services Review Committee (JSRC) tri-service coordination to promote commonality and joint programs with focus on interoperability/connectivity communications and CNS/ATM. Supported and participated in Avionics OAG panels and HFQMB.											
- (U) (\$ 2.179) Safety: Completed analysis of alternatives and technology feasibility study. Established a phased implementation approach. Identified an MCAS lead platform and completed Implementation Study for embedding MCAS in a host unit.											

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Exhibit R-2a, RD TEN Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	W0572, Joint Services/Navy Standard Avionics Components and Subsystems
<p>- (U) (\$ 2.265) Safety: Completed PDR/CDR of the TAWS for F/A-18 OFP 17C/18E. Initiated study to investigate other commercial based systems and sensors that would enhance TAWS performance in warning against CFITS, as applied to other Naval platforms.</p> <p>- (U) (\$ 1.014) Awarded contract for TAMMAC mission planning capability to the Naval Portable Flight Planning Systems (N-PFPS). Initiated and completed software SDR, PDR and CDR.</p> <p>- (U) (\$.320) Conducted Mission Planning System Module Integration for Common Avionics Systems, to include the ARC-210 radio.</p> <p>- (U) (\$ 3.958) Commenced CDRs for RNP-4, awarded contract for Mode S to ensure required access for commercial derivative and tactical naval aircraft for CNS/ATM and initiated platform integration of the Mode S system, completed PIRs/CIRs for Mode S.</p> <p>2. FY 2001 PLANS:</p> <p>- (U) (\$66.088) Complete DT-IIA1 for baseline AMC&D on F/A-18 E/F system. Begin DT-IIA2 and OT-IIA1 for baseline system on F/A-18 E/F. Conduct PDR and CDR for AMC and Fibre Channel Network Switch and procure EMD assets for phased program (AMC&D, 8 x 10 display and Fibre Channel Network Switch). Continue DT-IIB1 and begin DT-IIB2 on AV-8B. Begin development of Multi-Purpose Color Display (MPCD) for F/A-18 C/D and AV-8B. Continue development of AMC for F/A-18E/F and AV-8B and continue 8 x 10 for F/A-18E/F.</p> <p>-(U) (\$ 1.060) Continue to support the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB.</p> <p>-(U) (\$.250) Completed OPEVAL and perform verification of corrections for deficiencies on C-2, V/UP-3 and F/A-18 aircraft for LPIA.</p> <p>- (U) (\$ 2.288) Safety: Integrate Phase I MCAS functionality into a host unit. Begin and complete MCAS PDR/CDR. Develop a flight testable unit.</p> <p>- (U) (\$ 3.069) Safety: Commence DT of the TAWS for F/A-18 OFP 17C/18E. Investigate and conduct simulator and flight testing of industry based TAWS and sensors which supplement TAWS performance, as applied to other Naval platforms.</p>		

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604215N, Standards Development	W0572, Joint Services/Navy Standard Avionics Components and Subsystems
<p>- (U) (\$.770) Complete software coding and functional/developmental testing efforts for TAMMAC/N-PFPS map planning capability. Award TAMMAC/JMPS/Unique Planning Components (UPC) development contract, finalize requirements for TAMMAC JMPS mission planning capability and conduct SDR and PDR for the TAMMAC/JMPS UPC.</p> <p>- (U) (\$.499) Continue requirements identification and conduct design reviews for integration of Mission Planning System Module Integration for Common Avionics Systems, to include ARC-210 radio. First software release for ARC-210 Fill Program (AFP) as stand-alone system modified to operate in Defense Information Infrastructure Common Operating Environment (JMPS operating environment).</p> <p>- (U) (\$ 6.182) Complete DT for CNS/ATM civil data links and commence TECHEVAL for RNP-4 and Mode S for CNS/ATM in VH and complete hardware development for data link.</p> <p>- (U) (\$ 2.238) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.</p> <p>3. FY 2002 PLANS:</p> <p>- (U) (\$40.958) Complete DT-IIA2 and begin DT-IIA3 for AMC&D on F/A-18E/F system. Complete DT-IIB1 and continue DT-IIB2 (TECHEVAL) on AV-8B. Conduct PDR and CDR for 8 X10 display. Continue development and obtain production approval for Multi-Purpose Color Display (MPCD) for AV-8B and F/A-18C/D. Continue development of 8X10 display, Fibre Channel Network Switch and AMC for F/A-18E/F. Continue development of AMC for AV-8B.</p> <p>- (U) (\$ 1.292) Continue to support and chair the JSRC tri-service coordination to promote commonality and joint programs with focus on interoperability communications, and CNS/ATM. Support and participate in Avionics OAG panels and HFQMB.</p> <p>- (U) (\$ 1.714) Safety: Integrate unit on MCAS lead test platform and conduct MCAS developmental testing. Perform platform studies to determine integration impacts on other platforms.</p> <p>- (U) (\$ 3.201) Safety: Complete DT and commence OT of the TAWS for F/A-18 OFP 17C/18E. Evaluate data and test results from simulator and flight testing of industry based TAWS and sensors which supplement TAWS performance.</p> <p>- (U) (\$.250) Conduct CDR, software coding and unit testing efforts for TAMMAC/JMPS (UPC).</p> <p>- (U) (\$.612) Second software release of ARC-210 AFP as partially JMPS-integrated package utilizing JMPS common database input (and correcting Software Trouble Reports (STRs) from first release).</p> <p>- (U) (\$ 6.398) Continue CNS/ATM integration of Mode S and RNP-4 functionality integration efforts into naval aircraft. Achieve MS III decision for Mode S.</p>		

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EXHIBIT R-2a, RDT&E Project Justification			DATE:
APPROPRIATION/BUDGET ACTIVITY			June 2001
RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
	0604215N, Standards Development	W0572, Joint Services/Navy Standard Avionics Components and Subsystems	
(U) B. PROGRAM CHANGE SUMMARY:			
	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	63.235	83.333	51.153
(U) Adjustments from the President's Budget:	-2.005	-0.889	3.283
(U) FY 2002 President's Budget Submit:	61.230	82.444	54.436
CHANGE SUMMARY EXPLANATION:			
(U) Funding: The FY 2000 net decrease of \$2.005 million consists of a decrease of \$.410 million for reprioritization of requirements within the Navy, a decrease of \$1.335 million for a Small Business Innovative Research (SBIR) assessment, a decrease of \$.012 million for Federal Technology Transfer, and a decrease of \$.248 for a Congressional Recission.			
The FY 2001 net decrease of \$0.889 million consists of a decrease of \$.125 million for reprioritization of requirements within the Navy, a decrease of \$.181 million for a Congressional Recission and a decrease of \$.583 million for a Congressional Reduction.			
The FY 2002 net increase of \$3.283 million consists of a \$4.000 million reduction to offset for affordability in Common Avionics support for the F/A-18C/D (offset taken against AMC&D), an increase of \$7.500 million for Advanced Mission Computer and Display, and a decrease of \$.228 million for reprioritization of requirements within the Navy.			
(U) Schedule: FY 2000 reflects a change in TAMMAC/N-PFPS SDR from 1Q/00 to 2Q/00 due to a two month delay in awarding the transition contract. TAMMAC/N-PFPS PDR changed from 2Q/00 to 3Q/00 due to a two month delay in awarding the transition contract. TAMMAC/N-PFPS CDR changed from 3Q/00 to 4Q/00 due to a two month delay in awarding the transition contract. Effort is contracted under Pt. Mugu omnibus that was late in award. CNS/ATM CDR changed from 3Q/00 to 4Q/00 due to delay in contract award. LPIA OPEVAL changed from 2Q/00 to 4Q/00 due to delays in aircraft availability during TECHEVAL and software anomalies. GPWS CAT II OT phase (15C OFP) changed from 1Q/00 to 3Q/00 due to aircraft availability. TAMMAC OPEVAL changed from 2Q/00 to 4Q/00 due to deficiencies found during TECHEVAL. AMC&D EMD Contract Award changed from 2Q/00 to 3Q/00 due to changes in contracting strategies. AMC&D PDR for Fibre Channel Network Switch changed from 4Q/00 to 1Q/01 due to design change to fibre optics for F/A-18E/F.			
FY 2001 reflects a change in TAMMAC MSIII decision changed from 1Q/01 to 3Q/01 as a result of delays in OPEVAL schedule. LPIA MSIII decision slipped from 4Q/00 to 1Q/02 for corrections of the deficiencies identified in LRIP units. JMPS UPC SDR changed from 2Q/01 to 3Q/01 due to changes in the JMPS Development schedule. JMPS PDR changed from 3Q/01 to 4Q/01 due to changes in the JMPS Development schedule. JMPS CDR changed from 3Q/01 to 1Q/02 due to changes in the JMPS Development schedule. TAWS DT changed from 1Q/01 to 4Q/01 due to F/A-18 aircraft availability. CNS/ATM DT changed from 2Q/01 to 3Q/01 due to late deliveries of VDL-4 equipment. MCAS CDR changed from 2Q/01 to 4Q/01 due to delay in contract awarded. The start of DT-IIA2 for F/A-18E/F was accelerated to start 3Q/01. DT-IIB1 and DT-IIB2 were realigned to reflect AV-8B program schedule changes for LRIP and MSIII decisions.			
(U) Technical: Not Applicable.			

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EXHIBIT R-2a, RDT&E Project Justification							DATE:			
APPROPRIATION/BUDGET ACTIVITY							June 2001			
RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME					
		0604215N, Standards Development			W0572, Joint Services/Navy Standard Avionics Components and Subsystems					
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
Line Item No. & Name		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete Total Cost
46, Common Avionics, APN		79.511	70.448	65.147	55.632	139.191	113.385	114.672	123.17	Continuing Continuing
0702207N, Depot Maintenance, RDT&E		1.684	0.561	0.742	0	0	0	0	0	8.626
AN/ARC-210 RT-1794(C)										
(U) D. ACQUISITION STRATEGY: AMC&D is utilizing a Sole source to McDonnell Douglas Corp. (MDC), a wholly owned subsidiary of the Boeing Company, for prototype design using an 845 Other Transaction Agreement (OTA) and Cost Plus Contract for EMD and LRIP. MDC conducted a competition to potential suppliers and selected General Dynamics Information Systems for the AMC, Honeywell for Displays, and Harris for Fibre Channel Network Switch.										
		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	TO COMPLETE
(U) E. SCHEDULE PROFILE:										
(U) Program Milestones		2Q/00 AMC&D PR			3Q/01 TAMMAC MSIII		1Q/02 LPIA MSIII		2Q/02 CNS/ATM Mode S MSIII	
(U) Engineering Milestones		2Q/00-2Q/00 TAWS F/A-18 (17C/18E) PDR 3Q/00-3Q/00 TAWS F/A-18 (17C/18E) CDR 2Q/00-2Q/00 TAMMAC/N-PFPS SDR 3Q/00-3Q/00 TAMMAC/N-PFPS PDR 4Q/00-4Q/00 TAMMAC/N-PFPS CDR 4Q/00-1Q/01 CNS/ATM RNP-4 CDRs 2Q/00-2Q/00 CNS/ATM Mode S PIR 3Q/00-4Q/00 CNS/ATM Mode S CIR 3Q/01-3Q/01 MCAS PDR 4Q/01-4Q/01 MCAS CDR 3Q/01-3Q/01 TAMMAC/JMPS UPC SDR 4Q/01-4Q/01 TAMMAC/JMPS PDR 1Q/01-1Q/01 AMC&D PDR (F/A-18E/F) 4Q/01-4Q/01 AMC&D CDR (F/A-18E/F) 1Q/02-1Q/02 TAMMAC/JMPS CDR								
(U) T&E Milestones		2Q/00-3Q/00 LPIA TECHEVAL 4Q/00-1Q/01 LPIA OPEVAL 3Q/00-4Q/00 GPWS CAT II OT (15C OFF) 1Q/00-3Q/00 TAMMAC TECHEVAL 4Q/00-1Q/01 TAMMAC OPEVAL 3Q/00-3Q/01 AMC&D DT-IIA1 (F/A-18E/F) 3Q/00-2Q/02 AMC&D DT-IIB1 (AV-8B) 4Q/01-2Q/02 TAWS DT (17C/18E OFF) 3Q/01-4Q/01 CNS/ATM DT 4Q/01-1Q/02 CNS/ATM TECHEVAL 3Q/01-3Q/02 AMC&D DT-IIA2 (F/A-18E/F) 4Q/01-2Q/02 AMC&D OT-IIA1 (F/A-18E/F) 4Q/01-1Q/03 AMC&D DT-IIB2 (AV-8B) 2Q/01-3Q/01 TAMMAC/N-PFPS DT 3Q/02-4Q/02 MCAS DT 3Q/02-1Q/03 TAWS OT (17C/18E OFF) 3Q/02-2Q/03 AMC&D DT-IIA3 (F/A-18E/F)								
(U) Contract Milestones		3Q/00 AMC&D EMD Contract Award 2Q/00 CNS/ATM Contract Award Mode S 2Q/00 TAMMAC/N-PFPS TRANSITION AWARD 2Q/01 TAMMAC/JMPS UPC DEVELOPMENT AWARD								

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604215N STANDARD DEVELOPMENT			W0572, Joint Services/Navy Standard Avionics Components and Subsystems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
AMC&D/ EMD Prime Contract	SS/845	Boeing, St. Louis, MO	37.294	6.100	11/00						43.394	43.394
AMC&D/ EMD Prime Contract	SS/CP	Boeing, St. Louis, MO	27.318	54.307	11/00	38.695	11/01			Continuing	Continuing	
LPIA/EMD Prime Contract	C/CS	BAE Systems, Wayne, NJ	7.416								7.416	7.416
TAMMAC/EMD Prime Contract	SS/CPIF	Boeing, St. Louis, MO	25.677								25.677	25.341
CNS/ATM/EMD Prime Contract	SS/BOA	Litton, Woodland Hills, CA	1.032			1.000	01/02				2.032	2.032
CNS/ATM/EMD Prime Contract	SS/CPIF	Rockwell, Cedar Rapids, IA	2.214	0.850	03/01						3.064	3.064
CNS/ATM/EMD Prime Contract	C/FPIF	BAE Systems, Greenlawn, NY	1.383	2.400	12/00	0.331	12/01				4.114	4.114
MCAS/EMD Prime Contract	TBD	TBD		1.713	04/01	0.434	01/02				2.147	2.147
Miscellaneous	Misc	Misc	44.517	8.139	11/00	7.349	11/01				60.005	
SBIR Assessment				2.238							2.238	
Subtotal Product Development			146.851	75.747		47.809				Continuing	Continuing	
Remarks:												
Miscellaneous	Misc	Misc	14.392	3.574	11/00	3.520	11/01			Continuing	Continuing	
Subtotal Support			14.392	3.574		3.520				Continuing	Continuing	
Remarks:												
LPIA - BAE Systems Contract is a Cost Share Contract and does not have a Target Value. This contract has been changed from a CPIF to a Cost Share and a total liability to the government of \$7,416.												

R-1 SHOPPING LIST - Item No. 97

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 25 of 26)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604215N, Standards Development			PROJECT NUMBER AND NAME W0572, Joint Services/Navy Standard Avionics Components and Subsystems						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Systems T&E/OT&E	WX	NAWC PAX	1.733	0.000		0.000					1.733	
Miscellaneous	Misc	Misc	15.939	3.123		3.096				Continuing	Continuing	
Subtotal T&E			17.672	3.123		3.096				Continuing	Continuing	
Remarks:												
Subtotal Management			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Total Cost			178.915	82.444		54.425				Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 97

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 26 of 26)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						0604216N Multi Mission Helicopter Upgrade Development					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	568.873	124.711	83.115	149.418							
H1707/ MMH Upgrade Development	568.873	124.711	83.115	136.618							
E3053 MH-60S AMCM				12.800							
Quantity of RDT&E Articles	2										
From program inception through FY99, the program was funded under P.E. 0604212N, ASW & Other Helo Development, Project Unit H1707. *The FY 2000 budget reflects a \$15M Congressional add from program element 0604212N for Parametric Airborne Dipping Sonar (PADS) which has been reduced by \$.328M for Congressional Undistributed adjustments and \$.058M for a Congressional rescission. **The FY 2001 budget reflects a \$5M Congressional add for ATIRCM/CMWS Integration, a \$5M Congressional add for TADIRCM, and a \$4M Congressional add for Advanced Threat Infrared Countermeasures which have been reduced by \$.046M and \$.036 respectively for Congressional Undistributed adjustments. (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Block II Upgrade improves the capability of the LAMPS MK III Weapons System to provide battle group protection and to add significant capability in coastal littorals and regional conflicts. The Block II Upgrade represents a significant avionics modification to the H-60 series helicopters by enhancing primary mission areas of Undersea Warfare (USW) and Surface Warfare (SUW). Airborne Low Frequency Sonar (ALFS) will be added to enhance the existing acoustic suite. An added multi-mode radar includes an inverse synthetic aperture radar mode (permits stand-off classification of hostile threats). An improved Electronics Surveillance Measu system (ESM) will enable passive detection and targeting of radar sources not currently detectable.											

R-1 SHOPPING LIST - Item No. 98

UNCLASSIFIED

Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 1 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVYBA-5	R-1 ITEM NOMENCLATURE 0604216N Multi Mission Helicopter Upgrade Development	
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>E3053 - The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations through search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The MH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the MH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering & Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>		

R-1 SHOPPING LIST - Item No. 98

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	PE 0604216N Multi-Mission Helicopter Upgrade Development					H1707 MMH Upgrade Development					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
		*	**								
Project Cost	568.873	124.711	83.115	136.618							
RDT&E Articles Qty	2										

From program inception through FY99, the program was funded under P.E. 0604212N, ASW & Other Helo Development, Project Unit H1707.

*The FY 2000 budget reflects a \$15M Congressional add from program element 0604212N for Parametric Airborne Dipping Sonar (PADS) which has been reduced by \$.328M for Congressional Undistributed adjustments and \$.058M for a Congressional rescission.

**The FY 2001 budget reflects a \$5M Congressional add for ATIRCM/CMWS Integration, a \$5M Congressional add for TADIRCM, and a \$4M Congressional add for Advanced Threat Infrared Countermeasures which have been reduced by \$.046M and \$.036 respectively for Congressional Undistributed adjustments.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Block II Upgrade improves the capability of the LAMPS MK III Weapons System to provide battle group protection and to add significant capability in coastal littorals and regional conflicts. The Block II Upgrade represents a significant avionics modification to the H-60 series helicopters by enhancing primary mission areas of Undersea Warfare (USW) and Surface Warfare (SUW). Airborne Low Frequency Sonar (ALFS) will be added to enhance the existing acoustic suite. An added multi-mode radar includes an inverse synthetic aperture radar mode (permits stand-off classification of hostile threats). An improved Electronics Surveillance Measures system (ESM) will enable passive detection and targeting of radar sources not currently detectable. This project procures two low rate initial production test articles.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- include
- (U) (\$69.012) EMD Phase I and II: Continued ESM development, continued design of operator/tactical assistance software programs and integrated self-defense suite, continued system software development, supported DT-II and ALFS Operational test. Conducted Test Readiness Review (TRR), and completed Critical Design Review (CDR). Conducted first flights on prototype aircraft to Common Cockpit testing. Continued procurement of management, manufacturing, material, and engineering labor associated with Test Articles avionics
 - (U) (\$16.265) Continued procurement of management, manufacturing, material, and engineering labor for the Test Articles Airframes remanufacture.
 - (U) (\$9.419) Completed efforts to incorporate commercial-off-the-shelf avionics technology, referred to as Common Cockpit, into prototypes.
 - (U) (\$.880) Completed procurement of GFE for Test Articles.

R-1 SHOPPING LIST - Item No. 97

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 3 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604216N Multi-Mission Helicopter Upgrade Development	H1707 MMH Upgrade Development	
<p>- (U) (\$7.477) Conducted developmental testing for SH-60R and ALFS operational testing. Conducted data reduction and analysis and prepared test report.</p> <p>- (U) (\$3.410) Continued avionics hardware updates, production test equipment development, Integrated Logistics Support, Engineering, and Testing.</p> <p>- (U) (\$2.864) Continued documentation and processing requirements for a multiple LRIP reviews. Completed procurement of lab assets for EMD Phase II. Continued Navy Logistics, systems engineering and test support, program management and travel. Supported requirements for LRIP Test Articles including aircraft maintenance, trainer systems development, Integrated Logistics Support, and field activity support.</p> <p>- (U) (\$.770) Procured Test Articles support, GFE repair, parts support, maintenance of prototypes/test articles, and completed SLEP fatigue redesign.</p> <p>- (U) (\$14.614) (Congressional Add) Developed, built, and tested new Parametric Airborne Dipping Sonar (PADS) prototype. Included Integrated Logistics Support analysis, flight demonstration, and engineering support.</p> <p>2. FY 2001 PLANS:</p> <p>- (U) (\$46.686) EMD Phase I and II: Continue ESM development and design of operator/tactical assistance software programs and integrated self-defense suite. Continue system software development and support DT-IIC and ALFS Operational testing. Conduct Test Readiness Review (TRR) and continue test flights of Test Article aircraft. Continue procurement of management, manufacturing, material, and engineering labor associated with Test Articles avionics. Support Acquisition Baseline Review.</p> <p>- (U) (\$12.264) Conduct DT-IIB and DT-IIC testing for SH-60R. Testing will be conducted on prototype aircraft and will concentrate on Acoustics (including ALFS), Radar ESM, and Common Cockpit. Testing will support LRIP II procurement decision.</p> <p>- (U) (\$2.593) Continue avionics hardware updates, production test equipment development, Integrated Logistics Support, Engineering, and Testing.</p> <p>- (U) (\$1.550) ProcureTest Articles support, GFE repair, parts support, and maintenance of test articles.</p> <p>- (U) (\$4.255) Continue documentation and processing requirements for multiple LRIP reviews. Continue Navy logistics, systems engineering and test support, program management and travel. Support requirements for Test Article aircraft including aircraft maintenance, trainer systems development, Integrated Logistics Support, and field activity support.</p>			

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UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 4 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604216N Multi-Mission Helicopter Upgrade Development	H1707 MMH Upgrade Development	
<p>- (U) (\$4.954) (Congressional Add) Integration of ATIRCM/CMWS on the SH-60R. Perform integration of Common Missile Warning System to include sensor alignment/sensor placement study for SH-60R mission profiles, and modification of existing ARMY threat data for over water and Littoral threats. Perform risk reduction efforts to incorporate integrated Advanced Tactical Infrared-Red Counter Measures.</p> <p>- (U) (\$3.964) (Congressional Add) Perform integration of ATIRCM into the SH-60R. Effort includes installation and testing of dual LASER/dual Jam-Head arrangement and programming and testing of User Defined Module (UDM) for aircraft threats over water.</p> <p>- (U) (\$5.000) (Congressional Add) Perform TADIRCM risk reduction efforts and develop manufacturing techniques for the two-color missile warning system and miniturized jamming component.</p> <p>- (U) (\$1.849) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.</p> <p>3. FY 2002 PLANS:</p> <p>- (U) (\$74.200) EMD Phase I and II: Continue system software and hardware development and integration to include: RADAR mode development, ESM development, acoustics and post processing, mission planning, weapons, stores and self defense, data fusion, logistics products including IETMs, boresighting equipment and integration. Support aircraft integration, problem investigation and resolution, lab management and upgrades, hardware investigations and repairs in support of the test program. Provide ILS support, Program Management support, Risk Management Board support, and subvendor support.</p> <p>- (U) (\$12.400) Airframe test articles, GFE repair, and risk management board support. Procurement of Digital Mock-up, weight reduction studies, ISD integration development and vibration testing. Complete and deliver test article aircraft.</p> <p>- (U) (\$12.518) Provide engineering specialties, Integrated Logistics Support, Contractor Services Support, System Engineering, Program Management and Travel as required to support the SH-60R developmental program and test activities (DT-IIC).</p> <p>- (U) (\$19.400) Continue testing of SH-60R and its mission avionics.</p> <p>- (U) (\$5.100) Continue Acoustics (including ALFS) development, integration and testing. Correct deficiencies encountered during testing and integration in order to support DT-IID.</p> <p>- (U) (\$13.000) Engineering and Logistics evaluation and analysis of impacts of SH-60R design on Dynamic Component life. Build test coupons and perform certification testing. Conduct instrumented ground and flight tests.</p>			

R-1 SHOPPING LIST - Item No. 98

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 5 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi Mission Helicopter Upgrade Dev	PROJECT NUMBER AND NAME H1707 MMH Upgrade Development																													
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: right;"><u>FY2000</u></th> <th style="text-align: right;"><u>FY2001</u></th> <th style="text-align: right;"><u>FY2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">132.963</td> <td style="text-align: right;">69.946</td> <td style="text-align: right;">7.886</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-8.252</td> <td style="text-align: right;">13.169</td> <td style="text-align: right;">128.732</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: right;">124.711</td> <td style="text-align: right;">83.115</td> <td style="text-align: right;">136.618</td> </tr> </tbody> </table> <p style="margin-top: 20px;">CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net decrease of \$8.252 million reflects a decrease of \$2.979 million for Small Business Innovative Research assessment (\$2.734M for H1707 and \$.245M for H2414) , \$4.753 million decrease for reprioritization of requirements within the Navy, and \$520 million decrease for Congressional Rescission (\$.462M for H1707 and \$58M for H2414). The FY 2001 net increase of \$13.169 million reflects Congressional adds totaling \$14.0M (\$5.0M for TADIRCM, \$5.0M for ATIRCM/CMWS Integration and \$4.0M for ATIRCM Integration into SH-60R) offset by a decrease of \$.106 million for reprioritization of requirements within the Navy and a decrease of \$.553 million for a Congressional Reduction, 172 reduction for a Congressional rescission. The FY 2002 net increase of \$128.732 million reflects a program plus-up of \$40.707 million for increased flight tests and software integration requirements; a decrease of \$.144 million for reprioritization of requirements within the Navy, an increase of \$.079 million for economic assumptions, an increase of \$.090 million for additional program support, and an increase of \$88.0M reprogrammed SH-60R APN funding (BLI 18200) to support the restructured SH-60R development program.</p> <p>(U) Schedule: Schedule changes are due to program restructure as a result of new acquisition strategy to build new production aircraft vice remanufacture.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>APN BLI-018200 SH-60R</td> <td style="text-align: right;">223.788</td> <td style="text-align: right;">209.417</td> <td style="text-align: right;">25.064</td> </tr> <tr> <td>APN BLI-060510 SH-60R Initial Spares</td> <td style="text-align: right;">12.263</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 10px;">Nore: FY01 includes \$156.201 being reprogrammed to reflect change in program acquisition strategy from remanufacture to new production.</p> <p>Related RDT&E</p> <p>(U) PE 0604507N Enhanced Modular Signal Processor</p> <p>(U) PE 0604261N Acoustic Search Sensors</p> <p>(U) PE 0604212N ASW & Other Helo Development (TCDL)</p>					<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	(U) FY 2001 President's Budget:	132.963	69.946	7.886	(U) Adjustments from the President's Budget:	-8.252	13.169	128.732	(U) FY 2002 President's Budget Submit:	124.711	83.115	136.618	<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	APN BLI-018200 SH-60R	223.788	209.417	25.064	APN BLI-060510 SH-60R Initial Spares	12.263	0.000	0.000
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R-1 SHOPPING LIST - Item No. 98

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 6 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME PE 0604216N Multi Mission Helicopter Upgrade Dev	PROJECT NUMBER AND NAME H1707 MMH Upgrade Development																				
<p>(U) D. ACQUISITION STRATEGY: The contracting plan for Common Cockpit was changed from a Federal Acquisition Regulation contract to a Section 845 Other Transaction. In FY99, the program was restructured to allow two prime contractors for the LRIP and Test Articles. A sole source contract was awarded to Sikorsky for the Air Vehicle portion and Lockheed Martin Federal Systems for the avionics integration.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>TRR#1 3Q/00</td> <td>TRR #2 3Q/01</td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td>DT-IIB 2Q/01-2Q/01 DT-IIC 3Q/01-4Q/02</td> <td>Complete DT-IIC 4Q/02</td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td>LMSI EMD II REPLAN 1Q/02</td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	(U) Program Milestones				(U) Engineering Milestones	TRR#1 3Q/00	TRR #2 3Q/01		(U) T&E Milestones		DT-IIB 2Q/01-2Q/01 DT-IIC 3Q/01-4Q/02	Complete DT-IIC 4Q/02	(U) Contract Milestones			LMSI EMD II REPLAN 1Q/02
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																			
(U) Program Milestones																						
(U) Engineering Milestones	TRR#1 3Q/00	TRR #2 3Q/01																				
(U) T&E Milestones		DT-IIB 2Q/01-2Q/01 DT-IIC 3Q/01-4Q/02	Complete DT-IIC 4Q/02																			
(U) Contract Milestones			LMSI EMD II REPLAN 1Q/02																			

R-1 SHOPPING LIST - Item 98

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY								June 2001				
RDT&E, N / BA-5			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			0604216N Multi Mission Helicopter Upgrade Dev			H1707 MMH Upgrade Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
EMD HW/SW Development	SS/CPFF	Lockheed Martin, Owego NY	386.893	46.686	11/00	74.200	11/01				507.779	507.779
ALFS System Refurbishment	C/CPIF	Raytheon, Rhode Island	24.502	1.600	03/01	3.400	12/01				29.502	29.502
COTS Avionics (Common Cockpit)	845OT	Lockheed Martin, Owego NY	70.530								70.530	70.530
COTS Acoustics Development	SS/CPIF	Lockheed Martin, Owego NY	9.106			1.700	11/01				10.806	10.806
Test Articles Airframe	SS/CPIF	Sikorsky, Stratford, CT	41.065			12.400	12/01				53.465	53.465
PADS Development	SS/CPIF	Sontech, Bedford, NH	17.769								17.769	17.769
GFE Repair	BOA	Sikorsky, Stratford, CT	3.216	1.550	12/00						4.766	4.766
ATIRCM/CMWS Integration	SS/CPFF	Lockheed Martin, Owego NY		4.954	09/01						4.954	4.954
Dynamic Components Analysis	SS/CPIF	Sikorsky, Stratford, CT				13.000	12/01				13.000	13.000
ATIRCM integration into SH-60R	SS/CPFF	Lockheed Martin, Owego NY		3.964	09/01						3.964	3.964
SBIR Assessment				1.849							1.849	1.849
TADIRCM Development	SS/CPFF	Lockheed Martin Sanders,		5.000	09/01						5.000	5.000
		Nashua, NH										

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 15)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604216N Multi Mission Helicopter Upgrade Dev			H1707 MMH Upgrade Development						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Engineering Support	WX	NAWC-AD PAX (Warm, PA)	32.580	1.576	11/00	4.678	11/01				38.834	
Engineering Support	RX	NAWC-AD PAX	6.266	0.457	12/00	2.747	12/01				9.470	
Integrated Logistics Support	WX	Cherry Point, Lakehurst	5.395	0.409	11/00	1.931	11/01				7.735	
Integrated Logistics Support	RX	Cherry Point, Lakehurst	0.070								0.070	
Training Support	RX/WX	NUWC/NAWC-AD PAX	1.371								1.371	
Other FY93 & Prior Year Cost	MISC	MISC Activities	46.260								46.260	
GFE - FLIR	RX	Crane	4.214								4.214	
GFE - AVR-2 Laser Interface Unit	MIPR	Army, Ft. Monmouth, NJ	1.636								1.636	
GFE- M299 Missile Launcher	MIPR	Redstone Arsenal	0.257								0.257	
Misc GFE Milstrips	Reqn	NAVICP	0.333								0.333	
GFE - Tester	WX	Crane	0.060								0.060	
GFE - Pyton Interface Unit	WX	Crane	0.500								0.500	
GFE - ALE-47 Countermeasures	WX/MIPR	Crane/Robins AFB	0.138								0.138	
COTS AP Engineering (H2631)	WX	NAWC-AD PAX	0.517								0.517	
SGS Equipment (H2633)	WX/RX	MISC Activities	0.969								0.969	
PADS Engineering Support (H2414)	WX/RX	MISC Activities	6.351								6.351	
AIC Engineering Support (H2413)	WX	NAWC-AD PAX	3.148								3.148	
AIC Engineering Support (H2413)	RX	NAWC-AD PAX	1.570								1.570	
Subtotal Support			111.635	2.442		9.356				0.000	123.433	
Remarks:												

R-1 SHOPPING LIST - Item No. 98

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 9 of 15)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604216N Multi Mission Helicopter Upgrade Dev			PROJECT NUMBER AND NAME H1707 MMH Upgrade Development					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC-AD, Pax River	19.622	11.418	10/00	17.833	11/01				48.873	
Operational Test & Evaluation	WX	NAWC-AD, Pax River	0.031	0.757	10/00	1.167	11/01				1.955	
Live Fire Test & Evaluation	WX	NAWC-WD, China Lake		0.089	10/00	0.400	11/01				0.489	
Subtotal T&E			19.653	12.264		19.400					51.317	
Remarks:												
Engineering Support (FFRDC)	MIPR	CECOM, Ft. Monmouth, NJ	2.452	0.797	12/00	0.699	12/01				3.948	
Government Engineering Support	WX	NAWC-AD Pax River	1.783	1.071	11/00	0.551	11/01				3.405	
Program Management Support	RX	MISC Activities	2.362	0.227	12/00	1.159	12/01				3.748	
PADS Management Support	RX	MISC Activities	1.081								1.081	
COTS AP Engineering (FFRDC)	MIPR	CECOM, Ft. Monmouth, NJ	0.063								0.063	
Travel	WX	NAWC-AD Pax River	1.474	0.711	10/00	0.753	10/01				2.938	
Subtotal Management			9.215	2.806		3.162					15.183	
Remarks:												
Total Cost			693.584	83.115		136.618				0.000	913.317	
Remarks:												

R-1 SHOPPING LIST - Item No. 98

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 10 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-MissionHelicopter Upgrade Development				PROJECT NUMBER AND NAME E3053 MH-60S AMCM					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			0.000	12.800							
RDT&E Articles Qty											
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Helicopter Combat Support (HC) mission is to maintain forward deployed fleet sustainability through rapid airborne delivery of materials and personnel and to support amphibious operations through search and rescue coverage. The primary roles of the aircraft are to conduct vertical replenishment (VERTREP), day/night ship-to-ship, ship-to-shore, and shore-to-ship external transfer of cargo; internal transport of passengers, mail and cargo, vertical on board delivery (VOD); airhead operations, and day/night search and rescue (SAR). The aircraft secondary roles include torpedo and drone recovery, noncombatant evacuation operations (NEO), Sea Air Land (SEAL) and Explosive Ordnance Disposal (EOD) support. The MH-60S ORD was modified in May 2000 to add Organic Airborne Mine Countermeasures (OAMCM) as a primary mission for the MH-60S. The AMCM mission will provide Carrier Battle Groups (CVBGs) and Amphibious Readiness Groups (ARGs) with an OAMCM capability.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 ACCOMPLISHMENTS: N/A</p> <p>2. FY 2002 PLANS:</p> <p>- (U) (\$12.800) Modification of MH-60S aircraft to support AMCM test and evaluation activities.</p>											

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-Mission Helicopter Upgrade Development	PROJECT NUMBER AND NAME E3053 MH-60S AMCM

(U) B. PROGRAM CHANGE SUMMARY:

	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget Submit:	0.000	0.000
(U) Adjustments from the President's Budget:	0.000	12.800
(U) FY 2002 President's Budget Submit:	0.000	12.800

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 2002 reflects a net increase of \$12.800 million for modification of MH-60S test assets to the AMCM configuration.

(U) Schedule: N/A

(U) Technical: N/A

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
0604212 RDT&E ASW and Other Helo Development	25.199	22.944	36.941
024000 APN-2 MH-60S	355.742	284.696	246.169
060510 APN-6 MH-60S	5.808	33.223	8.787
0204302 OPN AMCM	0.000	0.000	8.509

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604216N Multi-MissionHelicopter Upgrade Development	PROJECT NUMBER AND NAME E3053 MH-60S AMCM
<p>(U) D. ACQUISITION STRATEGY:</p> <p>(U) E. SCHEDULE PROFILE: See See MH-60S Development schedule in PE 0604210 PU H2415</p> <p style="text-align: right;"><u>TO COMPLETE</u></p>		

R-1 SHOPPING LIST - Item No98

UNCLASSIFIED

Exhibit R-2a, RDTE Budget Item Justification
(Exhibit R-2a, page 13 of 15)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604216N Multi-Mission Helicopter Upgrade Development			E3053 MH-60S AMCM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
MH-60S NRE and Modifications	SS/CPIFF	Sikorsky, Stratford, CT				12.800	11/01				12.800	12.800
											0.000	0.000
											0.000	0.000
											0.000	0.000
											0.000	0.000
											0.000	0.000
											0.000	0.000
Subtotal Product Development			0.000	0.000		12.800		0.000		0.000	12.800	12.800
Remarks:												
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000			0.000	

R-1 SHOPPING LIST - Item No. 98

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 14 of 15)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604216N Multi-Mission Helicopter Upgrade Development				PROJECT NUMBER AND NAME E3053 MH-60S AMCM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
											0.000		
											0.000		
											0.000		
											0.000		
Subtotal T&E			0.000	0.000		0.000		0.000			0.000		
Remarks:													
Misc Management Support	Various	Various									0.000		
Program Management Support	Various	NAVAIR									0.000		
Engineering Support	Various	NAWCAD									0.000		
Travel	WX	NAWCAD									0.000		
CSTRS Field Activity Support	WX	Various									0.000		
AMCM Training Systems Dev	Various	TBD											
Subtotal Management			0.000	0.000		0.000		0.000			0.000		
Remarks:													
Total Cost			0.000	0.000		12.800		0.000			12.800		
Remarks:													

R-1 SHOPPING LIST - Item No. 98

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 15 of 15)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604217N S-3 Weapon System Improvement					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	32.242	4.918*	0.450	0.428							
H0489 S-3 WSIP	32.242	4.918*	0.450	0.428							
Quantity of RDT&E Articles	Not Applicable										
<p>* FY 2000 budget reflects a \$3.000 million Congressional add for Surveillance System Upgrade executed under H2776, which has been revised by \$.028 million for Congressional undistributed reductions.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The current program provides continuation of a series of progressive modular improvements which began with the S-3 Weapons System Improvement Program (WSIP) Phase I (S-3A modified to S-3B configuration). Based upon the S-3 WSIP Operational Requirement, the full program achieves the required multi-mission operational capability through continuous time-phased, selective mission avionics processing upgrades that are pursued in priority order. Initial Nunn-funded development focused on the Co-Processor Memory Unit (CPMU) hardware, a joint U.S./Canadian industrial base development program which provides the core processing capability and open architecture required for future modular S-3B modification. This program will complete CPMU integration and test and rewrite existing Tactical Mission Program (TMP) code into Ada higher-order language. Ada TMP development and CPMU integration will be leveraged to provide for sensor and connectivity enhancements in conjunction with the S-3B Surveillance System Upgrade (SSU) Project.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 99

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604217N CSA Development					H0489 S-3 WSIP					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	32.242	4.918*	0.450	0.428							
RDT&E Articles Qty											

* FY 2000 budget reflects a \$3.000 million Congressional add for Surveillance System Upgrade executed under H2776, which has been revised by \$.028 million for Congressional undistributed reductions.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The current program provides continuation of a series of progressive modular improvement which began with the S-3B Weapon System Improvement Program (WSIP) Phase I (S-3A modified to S-3B configuration). Based upon the S-3 WSIP Operational Requirement, the full program achieve the required multi-mission operational capability through continuous time-phased, selective mission avionics/processing upgrades that are pursued in priority order. Initial Nunn-funded development focused on the Co-Processor Memory Unit (CPMU) hardware, a joint U.S./Canadian industrial base development program, which provides the core processing capability and open architecture required for future modular S-3B modification. This program will complete CPMU integration and test and rewrite existing Tactical Mission Program (TMP) code into Ada higher order language. Ada TMP development and CPMU integration will be leveraged to provide for sensor and connectivity enhancements in conjunction with the S-3B Surveillance System Upgrade (SSU) project.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$.595) Completed Ada software development for CPMU.
- (U) (\$1.480) Completed Ada developmental integration and testing.
- (U) (\$.900) Initiated and completed software development and integration effort for the SSU project.
- (U) (\$.912) Initiated and completed radar development effort for SSU project.
- (U) (\$1.031) Initiated and completed SSU related integration and testing.

2. FY 2001 PLANS:

- (U) (\$.434) Initiate support of Ada operational software testing.
- (U) (\$.016) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.

3. FY 2002 PLANS:

- (U) (\$.428) Continue support of Ada operational software development and testing.

R-1 SHOPPING LIST - Item No. 99

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:																								
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																								
RDT&E, N / BA-5	0604217N CSA Development	H0489 S-3 WSIP																								
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table><thead><tr><th></th><th>FY2000</th><th>FY2001</th><th>FY2002</th></tr></thead><tbody><tr><td>(U) FY 2001 President's Budget:</td><td>5.067</td><td>0.455</td><td>0.438</td></tr><tr><td>(U) Adjustments from the President's Budget:</td><td>-0.149</td><td>-0.005</td><td>-0.010</td></tr><tr><td>(U) FY2002 President's Budget Submit:</td><td>4.918</td><td>0.450</td><td>0.428</td></tr></tbody></table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net decrease of \$.149 million consist of a decrease for a Small Business Innovative Research Assessment (\$.088 million), a decrease for a reprioritization of requirements within the Navy (\$.041 million), and a decrease for a Congressional Recission (\$.020 million). The FY 2001 net decrease of \$.005 million consist of a decrease for a Congressional Reduction (\$.003 million), a decrease for a Congressional Recission (\$.001 million), and a decrease for reprioritization of requirements within the Navy (\$.001 million). The FY 2002 net decrease of \$.010 million consist of a decrease for reprioritization of requirements within the Navy (\$.002 million), and a decrease for economic assumptions (\$.008 million).</p> <p>(U) Schedule: Ada OT&E 1Q/01 was inadvertently listed as to complete and should be start.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table><thead><tr><th>Line Item No. & Name</th><th>FY 2000</th><th>FY 2001</th><th>FY 2002</th></tr></thead><tbody><tr><td>APN S-3 OSIP (04-96)</td><td>8.918</td><td>7.040</td><td>5.429</td></tr></tbody></table>				FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	5.067	0.455	0.438	(U) Adjustments from the President's Budget:	-0.149	-0.005	-0.010	(U) FY2002 President's Budget Submit:	4.918	0.450	0.428	Line Item No. & Name	FY 2000	FY 2001	FY 2002	APN S-3 OSIP (04-96)	8.918	7.040	5.429
	FY2000	FY2001	FY2002																							
(U) FY 2001 President's Budget:	5.067	0.455	0.438																							
(U) Adjustments from the President's Budget:	-0.149	-0.005	-0.010																							
(U) FY2002 President's Budget Submit:	4.918	0.450	0.428																							
Line Item No. & Name	FY 2000	FY 2001	FY 2002																							
APN S-3 OSIP (04-96)	8.918	7.040	5.429																							

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604217N CSA Development	PROJECT NUMBER AND NAME H0489 S-3 WSIP																				
<p>(U) D. ACQUISITION STRATEGY: The Operational Requirements Document (ORD) was signed on 27 March 1997. The Acquisition Plan was number 90-14 and was approved on 17 October 1994. The contract is a Cost Plus Fixed Fee (CPFF) and was awarded to Lockheed Martin, Eagan, MN on 28 July 1995.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td>1Q/01 ADA Fleet Introduction</td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>2Q/00 Ada IV&V</td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td>3Q-4Q/00 Ada DT</td> <td>1Q/01 ADA OT&E Start</td> <td>1Q/02 OT&E Continue</td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	(U) Program Milestones		1Q/01 ADA Fleet Introduction		(U) Engineering Milestones	2Q/00 Ada IV&V			(U) T&E Milestones	3Q-4Q/00 Ada DT	1Q/01 ADA OT&E Start	1Q/02 OT&E Continue	(U) Contract Milestones			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																			
(U) Program Milestones		1Q/01 ADA Fleet Introduction																				
(U) Engineering Milestones	2Q/00 Ada IV&V																					
(U) T&E Milestones	3Q-4Q/00 Ada DT	1Q/01 ADA OT&E Start	1Q/02 OT&E Continue																			
(U) Contract Milestones																						

R-1 SHOPPING LIST - Item No. 99

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5			0604217N CSA Development				H0489 S-3 WSIP					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Subtotal Product Development			0.000	0.000		0.000						
Remarks:												
Software Development	SS/CPFF	LM NE&SS, Eagan, MN	31.106									31.106
Radar Development	SS/CPFF	Raytheon McKinney, TX	0.912									0.912
Technical Support	C/FFP	RBC Arlington, VA	0.100									0.100
Subtotal Support			32.118	0.000		0.000						32.118
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604217N CSA Development			PROJECT NUMBER AND NAME H0489 S-3 WSIP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD Pax River, MD	4.694	0.434	12/00	0.428	12/01					
SBIR Assessment				0.016								
Subtotal T&E			4.694	0.450		0.428						
Remarks:												
Travel			0.348									
Subtotal Management			0.348	0.000		0.000						
Remarks:												
Total Cost			37.160	0.450		0.428						
Remarks:												

R-1 SHOPPING LIST - Item No. 99

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

UNCLASSIFIED

EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X2345 Fleet METOC Equipment										
	4,223	4,472	4,785						CONT.	CONT.
X2346 METOC Sensor Engineering										
	1,510	1,523	1,561						CONT.	CONT.
TOTAL	5,733	5,995	6,346						CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Air/Ocean Equipment Engineering (AOEE) Program Element provides for the engineering and manufacturing development of onboard and remote sensors, communication interfaces, and processing and display devices. This equipment is specifically designed to measure, ingest, store, process, distribute and display meteorological and oceanographic (METOC) parameters essential to the optimum employment of Naval warfare systems. AOEE also develops increased capabilities for shipboard and shore based tactical systems. In addition, AOEE provides for the engineering development of specialized equipment and measurement techniques to obtain METOC data in denied and remote areas.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

R-1 Shopping List - Item No 100 (1) of 100 (12)

Exhibit R-2, RDT&E,N Budget Item Justification

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

(U) COST (Dollars in thousands)

PROJECT NUMBER & Title	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X2345 Fleet METOC Equipment										
	4,223	4,472	4,785						CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the engineering and manufacturing development of sensors, communication interfaces, and processing and display equipment. This equipment is designed to measure, ingest, store, process, distribute and display meteorological and oceanographic (METOC) parameters and derived products. Major emphasis areas include the Tactical Environmental Support System (TESS) and the associated Navy Integrated Tactical Environmental Subsystem (NITES), the Marine Corps Meteorological Mobile Facility (METMF), the AN/SMQ-11 satellite receiver/recorder, weather radars, and the development of new sensors such as active and passive atmospheric profilers for incorporation into the replacement system (MORIAH) for the Shipboard Meteorological and Oceanographic Observing System (SMOOS). This project also exploits new GOTS/COTS technologies for the Navy's computer-based tactical shipboard and shore capability used to predict and assess the impact of the operating environment on the performance of platforms, weapons and sensor systems.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$1,219) Continued engineering development of a data exchange interface.
- (U) (\$1,233) Continued engineering development of fleet systems.
- (U) (\$725) Continued Lead Laboratory tasks in support of software development, assisting model developers and providing technical assistance to other activities.
- (U) (\$721) Began exploitation of off-the shelf prototype hardware and other emerging technologies.

R-1 Shopping List - Item No 100 (2) of 100 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

- (U) (\$325) Completed development of advanced database and visualization tools.

2. (U) FY 2001 PLAN:

- (U) (\$1,345) Complete engineering development of a data exchange interface. Begin engineering development of an object oriented database management system employing artificial intelligence technology.
- (U) (\$1,340) Continue engineering development of fleet systems.
- (U) (\$715) Continue Lead Laboratory tasks in support of software development, assisting model developers and providing technical assistance to other activities.
- (U) (\$1,072) Continue exploitation of off-the shelf prototype hardware and other emerging technologies.

3. (U) FY 2002 PLAN:

- (U) (\$1,450) Continue engineering development of an object oriented database management system employing artificial intelligence technology.
- (U) (\$1,562) Continue engineering development of fleet systems.
- (U) (\$750) Continue Lead Laboratory tasks of software integration, assisting model developers and providing technical assistance to other activities.
- (U) (\$1,023) Continue exploitation of off-the-shelf prototype hardware and other emerging technologies.

B. (U) PROGRAM CHANGE SUMMARY:

(U) Funding: FY 2000 adjustments are due to SBIR Assessment (-64), Across the Board adjustments (-25), and Section 8055 Congressional Proportionate Rescission (-17), Reprogrammed to Tomahawk (-87) and Miscellaneous Navy Adjustments (-45).

R-1 Shopping List - Item No 100 (3) of 100 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

(U) Funding: FY 2001 adjustments are due to Section 8086 .7% Pro-rata Reduction (-32), Government Wide Recission (-10).

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

R-1 Shopping List - Item No 100 (4) of 100 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY2007 Estimate	To Complete	Total Program
(U) OPN line 4226	18,396	24,328	26,114						CONT.	CONT.
(U) RELATED RDT&E: PE 0603207N, Air/Ocean Tactical Applications.										

D. (U) ACQUISITION STRATEGY: Not applicable.

R-1 Shopping List - Item No 100 (5) of 100 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

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Exhibit R-3 Proejct Cost Analysis (page 1)							Date: June 01					
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N/BA5			PROGRAM ELEMENT: 0604218N				PROJECT NAME AND NUMBER: X2345 FLEET METOC EQUIP					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 + PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development												
	WX	NRL	3,122	1,738	N/A	1,903	N/A		N/A	CONT	CONT	CONT
	WX	SSC SD	1,200	610	N/A	622	N/A		N/A	CONT	CONT	CONT
	CP	RAYTHEON	400	205	N/A	209	N/A		N/A	CONT	CONT	CONT
	N/A	MISC	2,473	1,449	N/A	1,572	N/A		N/A	CONT	CONT	CONT
Subtotal Product Development			7,195	4,002	N/A	4,306	N/A		N/A	CONT	CONT	CONT
Remarks:												
Support	CP	SSA	775	410	N/A	418	N/A		N/A	CONT	CONT	CONT
Subtotal Support			775	410	N/A	418	N/A		N/A	CONT	CONT	CONT
Remarks												

UNCLASSIFIED

Exhibit R-3 Project Cost Analysis (page 2)									Date: June 01			
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N/BA5			PROGRAM ELEMENT: 0604218N				PROJECT NAME AND NUMBER: X2345 FLEET METOC EQUIP					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 + PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
T&E	PD	OPTEVFOR	120	60	N/A	61	N/A		N/A			
Subtotal T&E			120	60	N/A	61	N/A		N/A			
Remarks												
Subtotal Management												
Remarks												
Total Cost			8,090	4,472	N/A	4,785	N/A	4,958	N/A	CONT	CONT	CONT
Remarks												

UNCLASSIFIED

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2346
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: METOC Sensor Engineering

(U) COST (Dollars in Thousands)

PROJECT NUMBER & Title	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
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X2346 METOC Sensor Engineering

1,510	1,523	1,561							CONT.	CONT.
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A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the engineering and manufacturing development of specialized, high resolution instrumentation systems and measurement techniques for obtaining near real-time in-situ meteorological and oceanographic (METOC) data in denied or remote areas. The objectives are to ruggedize and package systems, sensors and instruments to survive the harsh littoral environment and also to meet demanding requirements for timeliness and accuracy. Engineering is performed within this project to ensure that air and safety certification for deployment from fleet aircraft or ships is met and that the proper data formats are employed for integration into existing or planned communications and displays. The end products are sensors and systems that will provide the tactical commander with near real-time, in-situ METOC data for operational use. In addition, this difficult to obtain data will provide important inputs for predictive models in areas of potential interest.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$615) Completed development transition of tactical dropsonde capability to NAVAIR PMA-264 for P-3/S-community, PMA-299 for SH-60R transition and acquisition sponsorship by PMA-222.
- (U) (\$418) Continued development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical (MEMS).
- (U) (\$477) Continue development of MEASURE.

R-1 Shopping List - Item No 100 (8) of 100 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2346)

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2346
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: METOC Sensor Engineering

2. (U) FY 2001 PLAN:

- (U) (\$598) Begin engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.
- (U) (\$500) Continue development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical (MEMS).
- (U) (\$425) Continue development of MEASURE.

3. (U) FY 2002 PLAN:

- (U) (\$458) Continue engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.
- (U) (\$388) Complete development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical (MEMS).
- (U) (\$400) Continue development of MEASURE.
- (U) (\$315) Begin engineering development of intelligent sensor suite for Unmanned Undersea Vehicles.

B. (U) PROGRAM CHANGE SUMMARY:

(U) Funding: FY 2000 adjustments are due to SBIR Assessment (-30), Miscellaneous Navy adjustments (-88), and Section 8055 Congressional Proportionate Rescission (-6).

(U) Funding: FY 2001 adjustments are due to Section 8086 .7% Pro-rata Reduction (-11), Miscellaneous Navy adjustments (-234).

R-1 Shopping List - Item No 100 (9) of 100 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2346)

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2346
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: METOC Sensor Engineering

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY:

(U) OTHER RDT&E: PE 0602435N (Ocean and Atmospheric Technology)
PE 0603207N (Air/Ocean Tactical Applications)

D. (U) ACQUISITION STRATEGY: Not Applicable.

R-1 Shopping List - Item No 100 (10) of 100 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2346)

UNCLASSIFIED

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Exhibit R-3 Project Cost Analysis (page 1)								Date: June 01				
APPROPRIATION/BUDGET ACTIVITY: RDT&E, N/BA5			PROGRAM ELEMENT: 0604218N					PROJECT NAME AND NUMBER: X2346 METOC SENSOR ENGINEERING				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 + PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	WX	NRL	1,150	610	N/A	622	N/A		N/A	CONT	CONT	
	N/A	MISC	2,138	913	N/A	939	N/A		N/A	CONT	CONT	
Subtotal Product Development			3,288	1,523	N/A	1,561	N/A		N/A	CONT	CONT	
Remarks:												
Subtotal Support												
Remarks												

R-1 Shopping List - Item No 100 (11) of 100 (12)

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

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Exhibit R-3 Project Cost Analysis (page 2)								Date: June 01				
APPROPRIATION/BUDGET ACTIVITY: RDT&E, N/BA5				PROGRAM ELEMENT: 0604218N				PROJECT NAME AND NUMBER: X2346 METOC SENSOR ENGINEERING				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 + PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal T&E												
Remarks												
Subtotal Management												
Remarks												
Total Cost			3,288	1,523	N/A	1,561	N/A		N/A	CONT	CONT	
Remarks												

R-1 Shopping List - Item No 100 (12) of 100 (12)

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604221N P-3 Modernization Program					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	50.151	10.531	7.333	3.220							
H1152 P-3 Sensor Integration	50.151	10.531	7.333	3.220							
Quantity of RDT&E Articles	Not Applicable										
<p>* The FY 2000 budget reflects an \$8.000 million Congressional add for APS-137 radar upgrades executed under H2777, which has been revised by \$.194 million for Congressional undistributed reductions.</p> <p>** The FY 2001 budget reflects an \$4.500 million Congressional add for APS-137 radar upgrades executed under H2876, which has been revised by \$.052 million for Congressional reductions.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides upgrades to P-3C aircraft systems to enhance surface and subsurface tracking and classification; attack capabilities including Specific Emitter Identification (SEI); and improved APS-137 radar tracking and upgrades. The P-3C Sensor Integration project develops software necessary to integrate advanced sensors into embedded P-3C Update III computer systems. Also, P-3 Sensor Integration will expand software development of P-3 systems to integrate additional sensors, tactical decision aids, and color capabilities to improve aircrew tactical proficiency and awareness. Sensor Integration is a continuous effort to integrate and test newly evolving ASW technologies such as the Advanced Explosive Echo Ranging (AEER) system and Shallow Water ASW Localization and Attack System (SWALAS).</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 101

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:				
								June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		0604221N P-3 Modernization Program				H1152 P-3 Sensor Integration						
COST (\$ in Millions)		Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		50.151	10.531*	7.333**	3.220						Continuing	Continuing
RDT&E Articles Qty												
<p>* The FY 2000 budget reflects an \$8.000 million Congressional add for APS-137 radar upgrades executed under H2777, which has been revised by \$.194 million for Congressional undistributed reductions.</p> <p>** The FY 2001 budget reflects an \$4.500 million Congressional add for APS-137 radar upgrades executed under H2876, which has been revised by \$.052 million for Congressional reduction.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides upgrades to P-3C aircraft systems to enhance surface and subsurface tracking and classification; attack capabilities including Specific Emitter Identification (SEI); and improved APS-137 radar tracking and upgrades. The P-3C Sensor Integration project develops software necessary to integrate advanced sensors into embedded P-3C Update III computer systems. Also, P-3 Sensor Integration will expand software development of P-3 systems to integrate additional sensors, tactical decision aids, and color capabilities to improve aircrew tactical proficiency and awareness. Sensor Integration is a continuous effort to integrate and test newly evolving ASW technologies such as the Advanced Explosive Echo Ranging (AEER) system and Shallow Water ASW Localization and Attack System (SWALAS).</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none">- (U) (\$.451) Continued system engineering support for integration of Improved Extended Echo Ranging (IEER) system.- (U) (\$1.396) Continued IEER software development, Critical Design Review (CDR), integration and testing.- (U) (\$7.747) Upgraded the APS-137 radar.- (U) (\$.937) Provided Aviation Depot Level Repairable (AVDLR) for P-3 test aircraft. <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none">- (U) (\$.447) Continue system engineering support for integration of Improved Extended Echo Ranging (IEER) system.- (U) (\$1.704) Continue IEER integration and flight testing.- (U) (\$.750) Provide Aviation Depot Level Repairable (AVDLR) for P-3 test aircraft.- (U) (\$4.356) Upgrade the APS-137 radar.- (U) (\$.076) Portion of extramural program reserved for Small business Innovation Research assessment in accordance with 15 USC 68. <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$.410) Continue system engineering support for integration of Improved Extended Echo Ranging (IEER) system and initiate engineering support of Advance Exstended Echo Ranging (AEER).- (U) (\$1.812) Complete IEER integration, fleet delivery and continue flight testing and initiate AEER software development.- (U) (\$.998) Provide Aviation Depot Level Repairable (AVDLR) for P-3 test aircraft.												

R-1 SHOPPING LIST - Item No. 101

UNCLASSIFIED

Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 2 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604221N P-3 Modernization Program	H1152 P-3 Sensor Integration	

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	10.950	2.906	3.228
(U) Adjustments from the President's Budget:	-0.419	4.427	-0.008
(U) FY 2002 President's Budget Submit:	10.531	7.333	3.220

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 net decrease of \$.419 million consist of a decrease for a Small Business Innovative Research Assessment (\$.366 million), a decrease for a Congressional Recission (\$.043 million), and a decrease for reprioritization of requirements with the Navy (\$.010 million). FY 2001 net increase of \$4.427 million consist of a Congressional add for APS-137B Radar (\$4.500 million), a decrease for a Congressional Reduction (\$.052 million), a decrease for a Congressional Recission (\$.016 million), and a decrease for reprioritization of requirements within the Navy (\$.005 million). The FY 2002 net decrease of \$.008 million consist of a decrease for reprioritization of requirements within the Navy (\$.013 million), and an increase for economic assumptions (\$.005 million).

(U) Schedule: Radar upgrade I&T was inadvertently listed under FY 2001. Contract award was delayed until 4Q/00 because of administrative delays after congressional add funding was released.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

R-1 SHOPPING LIST - Item No. 101

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:																				
			June 2001																				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																					
RDT&E, N / BA-5	0604221N P-3 Modernization Program	H1152 P-3 Sensor Integration																					
<p>(U) D. ACQUISITION STRATEGY: The Air Deployable Active Receiver/Improved Extended Echo Ranging (IEER) Operational Requirements Document (Ser# 297(1)-05-97)) for H1152 was approved on 29 December 1997. The P-3 ASUW Improvement Program (AIP) ORD (Ser# 355-88-94) for H2417 was approved on 30 March 1994. The Acquisition Plan (AIR-93-08A Rev 2) was approved on 30 March 1998.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td>1Q/00 Radar IOC 3Q/00 SEI IOC</td> <td>1Q/01 Radar Upgrade IOC</td> <td>2Q/02 IEER Fleet Delivery</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>2Q/00 IEER CDR 3Q/00 IEER I&T 4Q/00 Radar Upgrade I&T</td> <td></td> <td>1Q-4Q/02 AEER P-3C Software Development</td> </tr> <tr> <td>(U) T&E Milestones</td> <td>1Q/00 Radar DT 2Q/00 SEI DT</td> <td>1Q/01-2Q/01 IEER DTIII 3Q/01-4Q/01 IEER OTIII</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td>Radar Upgrade Contract Award 4Q/00</td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	(U) Program Milestones	1Q/00 Radar IOC 3Q/00 SEI IOC	1Q/01 Radar Upgrade IOC	2Q/02 IEER Fleet Delivery	(U) Engineering Milestones	2Q/00 IEER CDR 3Q/00 IEER I&T 4Q/00 Radar Upgrade I&T		1Q-4Q/02 AEER P-3C Software Development	(U) T&E Milestones	1Q/00 Radar DT 2Q/00 SEI DT	1Q/01-2Q/01 IEER DTIII 3Q/01-4Q/01 IEER OTIII		(U) Contract Milestones	Radar Upgrade Contract Award 4Q/00		
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																				
(U) Program Milestones	1Q/00 Radar IOC 3Q/00 SEI IOC	1Q/01 Radar Upgrade IOC	2Q/02 IEER Fleet Delivery																				
(U) Engineering Milestones	2Q/00 IEER CDR 3Q/00 IEER I&T 4Q/00 Radar Upgrade I&T		1Q-4Q/02 AEER P-3C Software Development																				
(U) T&E Milestones	1Q/00 Radar DT 2Q/00 SEI DT	1Q/01-2Q/01 IEER DTIII 3Q/01-4Q/01 IEER OTIII																					
(U) Contract Milestones	Radar Upgrade Contract Award 4Q/00																						

R-1 SHOPPING LIST - Item No. 101

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604221N P-3 Modernization Program			H1152 P-3 Sensor Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	C/FP	Raytheon, McKinney, Tx	2.217	4.356	01/01							Continuing
SBIR Assessment				0.076								
Subtotal Product Development			2.217	4.432		0.000						
Remarks:												
Software Development	C/FP	Raytheon, McKinney, Tx	5.781									Continuing
Software Development	C/FP	Raytheon, McKinney, Tx	1.998									Continuing
Software Development	SS/FP	LMNESS, Egan, MN	14.561									Continuing
Systems Engineering	Various	Various	25.877	1.101	12/00	1.209	12/01					
Subtotal Support			48.217	1.101		1.209						
Remarks:												

R-1 SHOPPING LIST - Item No. 101

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604221N P-3 Modernization Program			PROJECT NUMBER AND NAME H1152 P-3 Sensor Integration						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD, Pax River, MD	5.572	0.750	12/00	0.998	12/01					
Subtotal T&E			5.572	0.750		0.998						
Remarks:												
Contractor Engineering Support	C/FP	RBC, Arlington, VA	3.616	0.447	12/00	0.410	12/01					Continuing
Government Engineering Support	WX	NAWCAD, Pax River, MD	1.060	0.603	12/00	0.603	12/01					
Subtotal Management			4.676	1.050		1.013						
Remarks:												
Total Cost			60.682	7.333		3.220						
Remarks:												

R-1 SHOPPING LIST - Item No. 101

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

UNCLASSIFIED

EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N
PROGRAM ELEMENT TITLE: Tactical Command System
(U) COST: (Dollars in Thousands)

PROJECT NUMBER TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
E2213	Mission Planning									
	10,712	17,405	20,944							
X0486	GCCS-M Tactical/Mobile									
	1,322	1,515	1,627							
X0709	GCCS-M Maritime Applications									
	6,417	6,702	7,758							
X2009	Trusted Information Systems (formerly JMCIS OED)									
	5,065	5,617	3,939							
X0521	GCCS-M Intelligence Applications									
	6,607	6,495	6,596							
X2305	GCCS-M Common Applications									
	11,602	11,850	11,014							
X2306	Naval Simulation System 1/									
	2,785	5,192	5,033							
X2307	Integrated Shipboard Network System (formerly Shipboard LAN/WAN)									
	0	4,466	3,958							
X3032	NTCSS Enterprise & MLDN									
	0	0	3,963							
TOTALS	44,510	59,242	64,832							

R-1 Shopping List-Item No. 102-1 of 102-71

UNCLASSIFIED

Exhibit R-2, Budget Item Justification

UNCLASSIFIED

EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N
PROGRAM ELEMENT TITLE: Tactical Command System

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Tactical Command System (TCS) upgrades the Navy's Command, Control, Computer and Intelligence (C³I) systems and processes C³I information for all warfare mission areas including planning, direction and reconstruction of missions for peacetime, wartime and times of crises. A major component of the TCS is the Global Command and Control System - Maritime (GCCS-M). GCCS-M is the Navy's fielded Command and Control system, a key component of the *Copernicus ... Forward* C4I strategy, and is the Navy's tactical implementation of the Global Command and Control System (GCCS). GCCS-M has aggressively pursued an evolutionary acquisition strategy in rapidly developing and fielding new C4I capabilities for GCCS-M Afloat, GCCS-M Ashore, GCCS-M Tactical/Mobile and OED users. GCCS-M current phase includes continued usage of the Defense Information Infrastructure Common Operating Environment (DII COE), as stipulated by the Joint Technical Architecture, incorporation of Fleet requirements for merging tactical and non-tactical networks, and application of mature Web and Personal Computer (PC) technologies to provide required information/capabilities. This phase will provide, in the short term, deployment of an integrated UNIX/PC/COTS based Naval implementation of GCCS-M which will provide the warfighter with a cost-effective, user-friendly, comprehensive C4I solution and, in the long-term, a continuous, integrated Command and Control link from sensor to shooter, including full-range real-time or near-real-time information to weapon systems for decision makers.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: These programs are funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

B. (U) PROGRAM CHANGE SUMMARY: **FY 00:** Transfer to SBIR (-\$640K), ONR BTR for NSS (+\$2,286K), BTR for ANBS/MUOS (\$-380), BTR to WINSAT (-\$494k), Miscellaneous Navy adjustments (-\$445K), Section 8055 Congressional Proportionate Rescission (-\$173K). **FY00 Net Change (+\$154K).** **FY 01:** Miscellaneous Navy adjustments (-\$64K), Ocean Surveillance Information System (+\$2,000), Section 8086 .7% Pro-Rata Reduction (-\$420K). Government-Wide Recission (-\$91K). **FY01 Net Change (+\$1,425K).**

R-1 Shopping List-Item No. 102-2 of 102-71

UNCLASSIFIED

Exhibit R-2, Budget Item Justification

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: E2213
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Mission Planning

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
E2213 Mission Planning	10,712	17,405	20,944							

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Mission Planning System (JMPS) is a co-development program with the Navy, Air Force, USSOCOM, and Army to develop a scaleable, extensible, and configurable open architecture to meet a full range of Joint automated mission planning needs. The JMPS mission planning system will provide the information, automated tools, and decision aids needed to rapidly plan for aircraft, weapon, or sensor missions as well as post-mission analysis of recorded data. This system will allow the warfighter to seamlessly perform flight planning, unit-level mission/combat planning, and multi-unit/strike planning, and will provide force-level decision aids. JMPS will be a Defense Information Infrastructure/Common Operating Environment (DII/COE) compliant mission planning system, which will meet future DOD requirements for interoperability within and across DOD C4I systems while reducing life-cycle cost. JMPS accomplishes these goals by establishing a standardized environment for mission planning systems (the Joint Mission Planning Environment (JMPE)) that provides a DII COE / Joint Technical Architecture (JTA) compliant Windows 2000 core, a mission planning infrastructure of basic databases, management tools, and framework services, and a set of common mission planning components. A JMPS mission planning system is a combination of the JMPE together with platform/Service unique components and the necessary system hardware to meet user mission planning needs and constraints. The Navy and Air Force will co-develop the common software, while individual platforms programs will develop platform specific functionality, similar to what is being done in both Tactical Automated Mission Planning System (TAMPS) and Air Force Mission Support System (AFMSS) programs.

(U) JUSTIFICATION FOR BUDGET ACTIVITY

These programs are funded under Engineering & Manufacturing Development because they encompass engineering and manufacturing development of new end-items prior to production approval decision.

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UNCLASSIFIED

Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: E2213
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Mission Planning

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:
(U) (\$10,712) Continued JMPS Version 1 development effort.
2. (U) FY 2001 Plan:
(U) (\$13,238) Continue JMPS Version 1 development effort.
(U) (\$3,600) Start development of Post Version 1 Combat Mission Planning components to support retirement of TAMPS.
(U) (\$567) Portion of extramural program reserved for Small Business Innovation Research Assessment in accordance with 15 USC 68.
3. (U) FY 2002 Plan:
(U) (\$17,286) Continue JMPS Post Version 1 development effort.
(U) (\$3,358) Start follow on additional Post Version 1 combat and force level component development.
(U) (\$300) Begin Operational Testing (OT) for JMPS version 1.

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) FY 2001 President's Budget:	11,107	17,592	11,369
(U) Adjustments from President's Budget:	-395	-187	+ 9,577
(U) FY 2002 President's Budget Submit:	10,712	17,405	20,944

CHANGE SUMMARY EXPLANATION:

(U) Funding: The net decrease in FY2000 of -\$395 thousand reflects a decrease of -\$82 thousand for reprioritization of requirements within the Navy and a decrease of -\$269 thousand for a Small Business Innovative Research assessment, and a decrease of -\$44 thousand for a Congressional Rescission. The net decrease in FY2001 of -\$187 thousand reflects a decrease of -\$26 thousand for reprioritization of requirements within the Navy, and a decrease of -\$161 thousand for a Congressional Rescission. The net increase in FY2001 of \$9,571 thousand reflects a POM 02 adjustment of \$10,458 thousand to fund JMPS

R-1 Shopping List-Item No. 102-4 of 102-71

UNCLASSIFIED

Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: E2213
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Mission Planning

Combat and Force level component development, a decrease of -\$63 thousand for reprioritization of requirements within the Navy, and a \$39 thousand increase for economic assumptions, and a -\$887 thousand decrease for a Web enabling effort.

(U) Schedule: The 3Q/01 JMPS OPEVAL has been redesignated as a 4Q/02 JMPS Version 1 (JV1) Operational Test (OT). The 1Q/02 JMPS IOC has been redesignated as a 2Q/03 JMPS Version 1 (JV1) IOC.

(U) Technical: Not Applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY

<u>Appn</u>	<u>FY 2000</u> <u>Estimate</u>	<u>FY 2001</u> <u>Estimate</u>	<u>FY 2002</u> <u>Estimate</u>	<u>FY 2003</u> <u>Estimate</u>	<u>FY 2004</u> <u>Estimate</u>	<u>FY 2005</u> <u>Estimate</u>	<u>FY 2006</u> <u>Estimate</u>	<u>FY2007</u> <u>Estimate</u>	<u>To</u> <u>Complete</u>
BLI 287600 TAC A/C Mission Planning System (OPN)	20,457	11,771	13,411						
Air Force (total)	17,136	20,565	16,904						

Related RDT&E

(U) P.E. 0604215N (Standards Development)

(U) D. ACQUISITION STRATEGY: The JMPS Acquisition strategy will evolve as the program matures but initially will cover the Engineering and Manufacturing Development (EMD) effort. The strategy entails a two-phased evolutionary approach to acquire the initial JMPS development effort. The combined USAF/USN Phase I of this effort obtained various technical studies, segment architect concept, design to cost estimate, and an architecture development statement of work. Phase I was added to the program to determine reduced cost strategies through software reuse from both USN TAMPS and USAF AFMSS programs. Additionally, this phase provided a risk reduction plan for the most effective migration of existing mission planning systems. Phase I was awarded to two contractors. In Phase II, one contractor was selected to develop the JMPS architecture framework and version 1 mission planning components. Post Version I component development will be broken into two phases. Components required to retire TAMPS and meet F-16 planning requirements will be developed under a modification to the existing architecture framework contract. All other combat and force level components will be acquired through a follow-on full and open competition.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: E2213

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: Mission Planning

(U) D. SCHEDULE PROFILE

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>To Complete</u>
(U) Program Milestones				
TAMPS Version 6.2.1	4Q/00 release			
NPFPS Version 3.2	4Q/00 release			
TSCM Version 2.4	3Q/00 release			
JMPS Version 1 (JV1)				2Q/03 IOC
JMPS Post Version 1 (JC1)				2Q/04 IOC
JMPS Force Level Planning				IOC 2004
JMPS Responsive Planning				IOC 2005

(U) Engineering Milestones

(U) T&E Milestones 2Q/00 TAMPS 6.2.1 OPEVAL 4Q/02 JMPS Version 1 OT 3Q/03 JMPS Post Version 1 OT

(U) Contract Milestones 3Q/01 JMPS Post V1 (JC1)
Contract Award 1Q/02 JMPS Follow on
Contract Award

R-1 Shopping List-Item No. 102-6 of 102-71

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Exhibit R-2a, Project Justification

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FY 2002/2003 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: E2213

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Mission Planning

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 2001 Cost</u>	<u>FY 2001 Award Date</u>	<u>FY 2002 Cost</u>	<u>FY 2002 Award Date</u>	<u>FY 2003 Cost</u>	<u>FY 2003 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Primary Development	SS/CPAF	Logicon, CA	16,463	10,682	11/00	12,592	11/01					
Primary Development	SS/CPAF	Logicon, CA				3,842	11/01					
Primary Development	MP	Eglin AFB, FL	4,665	2,165	11/00	150	11/01					
Primary Development	MP	Hill AFB, UT		563	11/00	120	11/01					
Systems Engineering	MP	FEDSIM (GSA)		100	11/00	70	11/01					
Award Fees				1,985	11/00	2,886	11/01					
Subtotal Product Development			21,128	15,495		19,660						
Remarks												

The JMPS follow-on development contract will be competitively awarded in FY02. The Air Force development effort will complete in FY02 with the deliverables, Mission Planning S/W tools, provided as GFE/GFI to the development contractor. The development effort is critical to meeting the JMPS IOC in FY02. In accordance with the JMPS Award Fee Plan, Logicon was awarded a rating of "Very Good," equating to 82% of the available Award Fee Pool.

Integrated Logistics Support	WX	SPAWAR, PA	345	350	11/00	157	11/01					
Integrated Logistics Support	WX	NAWCAD, MD	179	180	11/00	100	11/01					
Subtotal Support			524	530		257						

Remarks

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UNCLASSIFIED

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

FY 2002/2003 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: E2213

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Mission Planning

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 2001 Cost</u>	<u>FY 2001 Award Date</u>	<u>FY 2002 Cost</u>	<u>FY 2002 Award Date</u>	<u>FY 2003 Cost</u>	<u>FY 2003 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Operational Test & Evaluation	WX	OPTEVFOR, VA	400	0		400	11/01					
Subtotal Test & Evaluation			400	0		400						
Remarks												
Govt. Engineering Support	WX	NAWCAD, MD	566	325	11/00	330	11/01					
Program Mgmt Support	RX	Various	338	293	11/00	199	11/01					
Travel	WX	NAWCAD, MD	225	195	11/00	94	11/01					
SBIR Assessment				567								
Subtotal Management			1,129	1,380		623						
Remarks												
Total Cost			23,181	17,405		20,940						

R-1 Shopping List-Item No. 102-8 of 102-71

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Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X0486
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Tac/Mobile

(U) COST: (Dollars in Thousands)

PROJECT

NUMBER	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	COST TO	TOTAL
TITLE	ACTUAL	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	COMPLETE	PROGRAM

GCCS-M Tactical/Mobile (GCCS-M Tac/Mobile)										
X0486	1,322	1,515	1,627							

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Global Command and Control System-Maritime (GCCS-M) Tactical/Mobile program provides evolutionary systems and equipment upgrades to support Maritime Sector Commanders with the capability to plan, direct and Control the tactical operations of Joint and Naval Expeditionary Forces and other assigned units within their respective area of responsibility. These operations include littoral, open ocean, and over land all-sensor surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, antisubmarine warfare, mining, search and rescue, and special operations.

The missions are supported by the Tactical Support Centers (TSCs) and the Mobile Operations Control Centers (MOCCs). Services provided include analysis and correlation of diverse sensor information; data management support; command decision aids; rapid data communication; mission planning and evaluation and dissemination of surveillance data and threat alerts to operational users ashore and afloat. All Tactical/Mobile systems are based on the GCCS-M architecture, which is Defense Information Infrastructure (DII) Common Operating Environment (COE) compliant.

TSCs provide C4I capability, air-ground, satellite and point-to-point communications systems; sensor analysis capabilities; avionics and weapons system interfaces and facilities equipment. MOCC is a scalable and mobile version of the TSC for operations from airfields that do not have TSC support. This program assures that existing TSCs and MOCCs are modernized to fulfill their operational requirements. TSC/MOCC will continue to support P-3C/S-3B aircraft updates to sensors and weapons systems, such as the Anti-Surface Warfare Improvement Program (AIP).

GCCS-M Tac/Mobile R&D efforts are developed in agreement with and in mutual support of OPNAV N62 and N88. These efforts are required to provide support for the N88 platforms as related to the non-C2 aspects of the program.

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UNCLASSIFIED

Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$430) Ported additional functions to Windows NT. Developed interface for emerging aircraft data transport devices, including development of new NT hardware drivers, redesign of a Human Machine Interface (HMI) for Windows, and a re-host of device applications on NT.
- (U) (\$272) Developed capability to receive and process information from new sensors such as Synthetic Aperture Radar (SAR) high resolution Inverse Synthetic Aperture Radar (ISAR) and advanced Electro-Optical (EO) devices. Investigated processing inverse and quadrature data from APS 137 B(V)5 radar.
- (U) (\$310) Developed expanded interfaces for new weapons and sensors.
- (U) (\$115) Performed initial steps to migrate Fast Time Analyzer System (FTAS) toward increased interoperability and commonality with the GCCS-M architecture. Investigated COTS signal processing products to replace proprietary hardware and software and provide growth capability to process information from new sensors, improved and advanced Extended Echo Ranging (EER).
- (U) (\$195) Developed integration plan for modernized Radio Frequency (RF) communications systems, including UHF, SHF, and EHF Satellite Communications (SATCOM) units into Tactical Mobile Units. Developed multi-Tactical Data Link (TADIL) interfaces to provide two-way TADIL support for the Tac/Mobile units.

2. (U) FY 2001 PLAN:

- (U) (\$515) Rehost additional functions to Windows NT under (DII COE). Improve Aircraft Status segment operability by focusing on ease of use and data sharing from pre-mission planning to post mission wrap up. Develop new functionality for Generic Mission Replay (GMR) to support mission replay of new aircraft capabilities, including CFS, IEER, and. 78A/B. Develop new functionality for Tactical Data Insertion (TDI) operational usability. Incorporate new P-3 aircraft capabilities including Global Null Steer and Command Function Select (CFS). Redesign Human Machine Interface (HMI) of Aircrew Brief segment to improve operator usability by automating data entry and auto-populating other applications.
- (U) (\$235) Develop expanded Aircraft Interfaces to improve processing for new aircraft sensors, including the APS-137 Synthetic Aperture Radar (SAR) and high resolution Inverse Synthetic Aperture Radar (ISAR) modes, as well as the Advanced Imaging Multi-spectral System (AIMS).

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

- (U) (\$115) Develop interface for new aircraft data transport devices. Improve Aircraft Tape Operating System (ATOS) user interface and incorporate new P-3 aircraft data transport devices, including Replacement Data Storage Systems (RDSS), Command Function Select (CFS), Improved Extended Echo Ranging (IEER), S-3B 4.4.2 & 4.5a, and Canadian CP-140 aircraft.
- (U) (\$189) Continue software development of improved acoustic Fast Time Analysis System (FTAS) into TSC and MOCC GCCS-M systems to enhance interoperability and commonality. Develop new function to support new aircraft IEER capability.
- (U) (\$145) Software development of Electronic Support Measures (ESM) Workstation Interfaces for new aircraft Specific Emitter Identification functions.
- (U) (\$316) Perform End-to-End Testing designed to simulate real world operational usage of the system to ensure that the system functions as an integrated product. Includes system compliance, system integration testing, segment compliance, aircraft interface, tactical feeds and requirements checking.

3. (U) FY 2002 PLAN:

- (U) (\$516) Develop new capabilities to support emerging aircraft weapons and non-acoustic sensors on P-3C ASUW Improvement Program (AIP), P-3C Baseline Modification Upgrade Program (BMUP), and other derivative aircraft. Analyze Multi-mission Maritime Aircraft (MMA) aircraft impact on TSC and MOCC systems. Continue to develop interfaces for emerging aircraft data transport devices. Perform testing on new software and hardware components.
- (U) (\$256) Analyze TSC/MOCC requirements for advanced data links such as LINK-16, Common Data Link (CDL) and other high bandwidth data transmission paths.
- (U) (\$493) Continue improvements to acoustic Fast Time Analysis System (FTAS) to reduce reliability on obsolete proprietary hardware, incorporate Commercial Off The Shelf (COTS) technology, and incorporate new functionality in support of emerging aircraft acoustic capabilities. Analyze and develop detailed set of requirements for follow-on system.
- (U) (\$150) Complete the rehosting of all functions to Windows NT including development of new hardware drivers and updates to stay current with the DII COE kernel.

R-1 Shopping List-Item No. 102-11 of 102-71

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X0486
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: GCCS-M Tac/Mobile

- (U) (\$212) Develop interfaces and incorporate joint and coalition SATCOM and line of site radios, cryptographic units and antenna technology. Ensure interoperability in a land, sea, air, and mobile environment.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

<u>Appn</u>	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
OMN (N62)	6,788	6,839	8,297							
OMN (N88)	3,527	3,197	3,305							

(U) RELATED RDT&E:

- PE 0604231N: (GCCS-M Maritime Apps X0709): GCCS-M Maritime Apps provides portions of GCCS-M functionality common among Afloat, Ashore, and Tactical/Mobile environments.
- PE 0604231N: (GCCS-M Common Apps X2305): GCCS-M Common Apps provides portions of the Defense Information Infrastructure Common Operating Environment (DII COE) functionality required by Afloat, Ashore, and Tactical/Mobile GCCS-M environments.
- PE 0604261N: (Acoustic Search Sensors): TSC maintains interoperability with S-3 weapon systems and future improvements.
- PE 0604221N: (P-3 Modernization): TSC maintains interoperability with, and fully supports P-3 system changes and enhancements.

C. (U) ACQUISITION STRATEGY: N/A

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

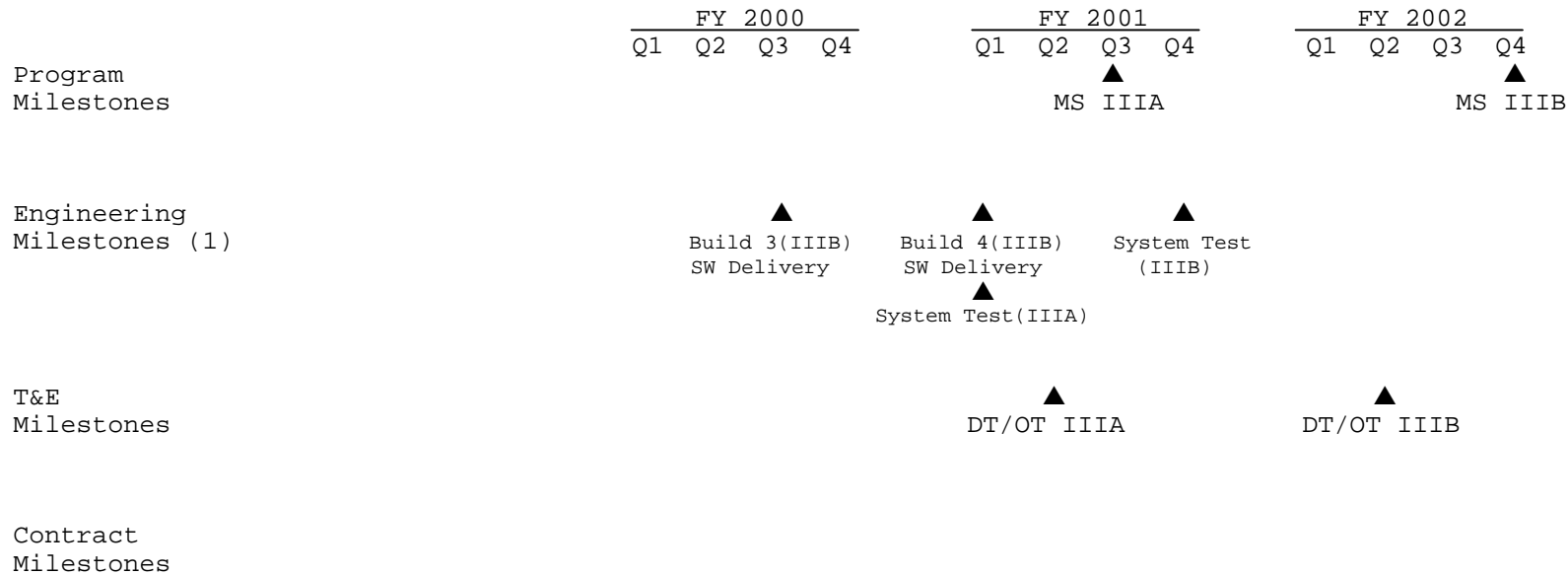
PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

D. (U) SCHEDULE PROFILE:



Note (1): Change in nomenclature from "GCCS-M 4.1 Drop" to "Build 3" and "Build 4" to reflect internal milestones for GCCS-M 4.x Development.

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UNCLASSIFIED

Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT NUMBER: X0486

PROJECT TITLE: GCCS-M Tac/Mobile

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	Various	Various	31,073	1,127	Var.	1,154	Var.					
Subtotal Product Development	Various	Various	31,073	1,127	Var.	1,154	Var.					
Remarks:												
System Engineering	Various	Various	18,469	135	Var.	138	Var.					
Subtotal Sys Eng Support	Various	Various	18,469	135	Var.	138	Var.					
Remarks												

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UNCLASSIFIED

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0486

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Tac/Mobile

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	Various	Various	3,019	30	Var.	69	Var.					
Subtotal T&E	Various	Various	3,019	30	Var.	69	Var.					
Remarks												
Project Management	Various	Various	9,713	223	Var.	266	Var.					
Subtotal Management	Various	Various	9,713	223	Var.	266	Var.					
Remarks												
Total Cost	Various	Various	62,274	1,515	Var.	1,627	Var.					

(U) COST (Dollars in thousands)

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UNCLASSIFIED

Exhibit R-3, Project Cost Analysis

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

PROJECT

NUMBER& TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
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X0709 GCCS-M Maritime Apps

6,417

6,702

7,758

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The GCCS-M system is the component of GCCS used in the afloat, ashore and tactical/mobile maritime environments. GCCS-M meets the requirements of the tactical commander for a near real-time, fused common tactical picture with integrated intelligence services and databases. GCCS-M supports the Command, Control, Communication, Computers and Intelligence (C4I) mission requirements of the Chief of Naval Operations (CNO), Fleet Commanders in Chief (CINC), Numbered Fleet Commanders (NFC), Officer in Tactical Command/Composite Warfare Commander (OTC/CWC), Type Commanders (TYCOM), Commander Submarine Operations Authority (COMSUBOPAUTH), Commander Task Force (CTF), Commander Amphibious Task Force (CATF), Commander Landing Force (CLF), Ship's Commanding Officer/Tactical Action Officer (CO/TAO), and Joint Task Force (JTF) Commanders, as well as other functional commanders such as the Command and Control Warfare Commander (C2WC). It also integrates both joint and service-unique Command and Control projects in order to support joint task force and Navy afloat requirements. Efforts include design, integration, and test of Tactical Decision Aids (TDAs), Navy Status of Forces (NSOF), and integration of GCCS-M baselines with weapons systems and Combat Direction Systems. These efforts will provide the battle group/force commanders with the information needed to enhance their warfighting capabilities. GCCS-M is also initiating a transition to Commercial Off The Shelf (COTS) hardware and software as part of the current GCCS-M initiative to capitalize on the latest Web/PC industry/commercial technology. GCCS-M is a key system currently being used to support real world operations afloat, ashore, and with tactical/mobile commanders.

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UNCLASSIFIED

Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$500) Joint Planning Network (JPN) / Tactical Data Information Links (TADILS) / Broadcasts: Developed new functionality and enhanced existing functionality to meet high priority requirements specified by the Fleet CINCs at the Copernicus Requirements Working Group (CRWG) '99. Built the ability to merge and display all source Tactical Intelligence Broadcast System (TIBS) and Tactical Receive Equipment & Related Applications (TRAP) data with TADIL tracks, desktop classified video teleconferencing, and distant learning tools.
- (U) (\$610) Employment Scheduling / Water Space Management (WSM): Continued to develop employment scheduling and decision support tools to maximize use of native NT environment. Extended functionality of scheduling tools to support creation of scenario-based calculations for fuel burn rates, deployment transit planning, unit best fit analysis, five year planning, review of maritime aviation readiness, and calculation of combined/joint exercise training readiness. Developed an integrated data display and dissemination tool to provide multiple echelons (ISICs, TYCOMs, and CINCs) a singular view of force scheduling data.
- (U) (\$510) Readiness: Continued to provide interfaces to process raw readiness data input from lower echelons and incorporate into validated readiness data repositories at fleet command centers. Enhanced readiness data processing by integrating Navy readiness systems. Integrated Navy readiness data with joint Global Status Of Resources and Training (GSORTS) databases and applications to facilitate joint operation preparation. Continued developing Force Planning tools to support Navy Mission Essential Task List (NMETL) and Navy/Joint Universal Task List (MUTL/JUTL). Provided an integrated product that enables users to develop scheduling data based upon input on force readiness.
- (U) (\$155) Employment Scheduling / WSM: Ported existing Water Space Management (WSM) application to PC and provided capability to advance WSM display to time periods specified by the operator. Provided capability to incorporate three-dimensional WSM deconfliction processing.
- (U) (\$155) JPN / TADILS / Broadcasts: Developed Anti Air Warfare Human Computer Interface (AAW HCI) & Situational Awareness (SA) tactical decision aids to support USN AAW missions in a joint/coalition environment. Interfaced TADIL capabilities to provide AAW SA to non-CDS equipped units that are not equipped with intelligence repositories.
- (U) (\$497) Aircraft Mission Planning / TACMOBILE: Provided an integrated solution for all services that support the generation of pre-flight mission objective briefs, interfaced with in-flight aircraft to transmit and receive imagery and Link data, and fused completed mission data to provide post-mission analysis and review. The aircraft support suite will maximize use of COTS PC tools to interface with legacy databases and provide easy-to-use processing tools for brief generation. Mission status board applications will interface

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

directly with remote mission event databases to enable online electronic editing during mission. Imagery and data transfer tools were built using commercial protocols to enable TSCs to interoperate with NATO and Joint platforms. Pre and Post-Flight analysis tools will integrate with web technologies to permit remote queries from disadvantaged sites.

- (U) (\$320) Threat Order of Battle (OOB) and Characteristics and Performance (C&P): Enhanced the C2WC decision aid & tools to take advantage of new/emerging sensors (organic & national). Developed and implemented C2WC capabilities to exploit national and theater EW/OOB databases (MIDB, EPL, etc.). Investigated providing C2WC capabilities to selected surface combatants.
- (U) (\$150) Threat OOB and C&P: Enhanced pre-flight capabilities to enable analysis of environmental data, threat and force data, sensors, and target motion data to be performed on the joint intelligence database (MIDB). Enhanced current implementation to support improvement of joint sensor data based on post-mission analysis.
- (U) (\$150) Architecture: Developed architecture to integrate COTS Enterprise Management tools in GCCS-M Maritime Applications to support remote system diagnostics, LAN inventory, and remote software distribution and installation. Implementation will support low-bandwidth users and poorly connected sites.
- (U) (\$200) JPN / TADILS / Broadcasts: Developed a Network-based broadcast FLTCAST product that provides web-based "info-cast" subscription capabilities for the fleet to access GCCS-M data using commercial web technology. Framework provides plug-in capabilities so that external programs could interface with GCCS-M and re-use the existing framework to distribute data, documentation, and training.
- (U) (\$250) Architecture: Designed parsers that interface with the Defense Information Infrastructure Common Operating Environment (DII COE) messaging products to populate tactical databases for GCCS-M Maritime Applications. Developed plug-in parsers that maximize integration between the track database and relational analysis databases, and are interoperable with the USMTF message format certification and DMS.
- (U) (\$300) Testing: Provided operational test planning to prepare for Operational Evaluation (OPEVAL) / Operational Test (OT).
- (U) (\$1,600) Testing: Provided Development Test phases in lab and operational sites for GCCS-M segments. Also provided any certification, compliancy (DII COE), and functional testing for each segment. Acceptance and development testing included joint certifications, compliancy with the DII COE and security policies, and functional testing for each segment.

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Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U) (\$150) Combat Systems Interface: Continued integration of GCCS Joint SW in shore and shipboard environments, including incorporation of Navy specific functionality. Fielding of the Maritime variant is interoperable with the joint GCCS system on the same network enabling seamless exchange of tactical data between platforms.
- (U) (\$490) Architecture: Developed a common GCCS-M infrastructure to support the network-centric warfare concept. Design maximizes processing power of current server applications while enabling clients powered with minimal COTS tools to access data in a traditional 3-tier architecture. Focus will include portable capability to support disembarked operations for Expeditionary Warfare.
- (U) (\$280) Combat Systems Interface: Developed and implemented integration with GCCS-M and Aegis/non-Aegis combat systems to achieve intra and inter ship interoperability with the common operational picture, including systems such as Advanced Tomahawk Weapon Control System (ATWCS), Tactical Tomahawk Weapon Control System (TTWCS) and Area Air Defense Commander (AADC).
- (U) (\$100) Testing: Provided engineering and integration testing to the IT-21 Integration Test Facility to ensure that GCCS-M Maritime applications operate effectively in the IT-21 ARM LAND and System environment.

2. (U) FY 2001 PLAN:

- (U) (\$1,300) Aircraft Mission Planning / TACMOBILE: Develop new functionality and enhance existing functionality to meet the high priority requirements specified by the Fleet CINCs and validated by CNO at the CRWG, including development of P-3 aircraft interfaces and TBMCS interoperability.
- (U) (\$135) Testing: Support operational test planning and execution to prepare for OPEVAL and MS IIIA.
- (U) (\$810) Architecture: Provide thin-client front end to the existing scheduling and readiness tools to enable disadvantaged users at Immediate Superior in Command (ISICs) and Type Commanders (TYCOMs) to exploit the same scenario-based calculation capabilities contained at fleet command centers. Users will be able to perform remote updates via internet web technology and database replication features, eliminating the requirement for message based data transfer.
- (U) (\$500) Readiness: Develop a web interface to the joint Global Status of Resources and Training (GSORTS) database so that all maritime users can provide inputs to the national status of forces data, as well as the lower echelon readiness systems in either a fleet command center with GCCS software or at Navy specific site fielding GCCS-M.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U) (\$552) Aircraft Mission Planning / TACMOBILE: Port all remaining UNIX-based TSC applications to a PC environment, using extensions designed for commercial desktop applications to interface with GCCS-M tactical data sources. Provide components for pre-flight sensor analysis that can be imbedded into other desktop utilities for scheduling and post-mission replay. Utilities will interface with the DII COE on NT for mission display, and will be incorporated into the FLTCAST effort for web-based subscription capabilities.
- (U) (\$200) Threat OOB and C&P: Migrate TSC applications to the current version of the Modernized Intelligence Database (MIDB). Migration to the Defense Intelligence Agency (DIA) database will enable TSCs to integrate with the Joint community for ATO generation, order of battle maintenance and targeting support.
- (U) (\$560) Useability: Provide Integrated Products (IP) that support both legacy AUTODIN or text-based data transfer, as well as move modern IP-based data transmission messages for data transfer and automated message handling. Leverage DMS effort into a Maritime implementation for organizational email and data transfer for population of tactical databases.
- (U) (\$980) Testing: Continue acceptance, development, and operational test phases in labs and operational sites. Acceptance and development testing includes joint certifications, compliancy with the DII COE and security policies, and functional testing for each segment. Funding will also be used to support the ongoing Test IPTs and TPWG processes.
- (U) (\$280) Useability: Continue integration of GCCS (Joint) software in shore and shipboard environments, including incorporation of Navy-specific applications into the Joint software and network environment. Ensure that all applications are also built to the common segmentation guideline, so that they can also be loaded on the same physical machine.
- (U) (\$455) Combat Systems Interface: Continue interface development between GCCS-M and Aegis/non-Aegis combat systems. Initiate a DII COE Level 7 integration between ATWCS, TTWCS, AADC, and GCCS-M to enable combat systems to be installed on a common platform.
- (U) (\$730) Architecture: Design a hybrid UNIX and PC server architecture to consolidate multiple low-end servers into a high availability enterprise server to increase reliability, maintainability and availability and to lower maintenance costs. Refine on the three-tier architecture to enable smaller-scale database and application servers to be swapped into architecture without disturbing client application code.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U) (\$200) Employment Scheduling / WSM: Continue enhancements to Water Space Management (WSM), identified through CRWG requirements process.

3. (U) FY 2002 PLAN:

- (U) (\$1,490) Aircraft Mission Planning / TACMOBILE: Provide C4I research and product improvement for P-3 mission and other avionics platforms. Support P-3 aircraft P3I and follow-on initiatives, including interface changes. Provide developmental support to P-3 Tactical Support Center operations by satisfying emerging technology requirements initiated by Fleet operators, developing interfaces to aircraft systems, and increasing the interoperability between P-3 support applications, including Aircraft Status, Aircrew Brief, Generic Message Replay & Reconstruction, Pre/Post-Flight ESM, P-3 Tactical Data Insertion, and Inverse Synthetic Aperture Radar (ISAR) video analysis. Provide interfaces to other aircraft mission planning systems, such as TAMPS or JMPS.
- (U)(\$731) Architecture: Develop and implement modernized architectures, including web-centric and N-Tier. Continue to develop Conops/procedures and interfaces to support joint amphibious warfare for embarked/disembarked Marine Corps elements. Test and integrate GCCS-M GOTS products into NT COTS installation and runtime environment. Perform testing and integration with latest commercial products to ensure complete interoperability and data level integration. Perform engineering to provide fleet recommendations on compatible hardware and software configurations/modifications to current baselines.
- (U)(\$2,225) Employment Scheduling / WSM: Develop and update employment scheduling capabilities in support of Fleet requirements. Develop VIPER capability on DII/COE compliant NT platforms. Integrate VIPER with latest versions of COTS/MS Office products. Incorporate emerging requirements validated and prioritized by VIPER operational community, which may include fuel management, notional templates, multiple proposals and deployment transit planning. Provide capability for employment scheduling data to be linked to readiness, logistics, intelligence, and track databases in such a way that operators can obtain a comprehensive understanding of all relevant data to be used in planning and command & control scenarios. Incorporate WSM requirements identified by CRWG process.
- (U)(\$1,837) Readiness: Research Fleet requirements for viewing and archiving readiness data. Link readiness data with track, intelligence, and imagery data to provide a comprehensive understanding of a unit's operational status. Continue to integrate GCCS (Joint) segments into GCCS-M. Provide web-based, graphical entry of Readiness data, and develop web-based solutions for viewing archived readiness data in Fleet-specified formats. Incorporate emerging requirements identified and prioritized during CRWG requirements process.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

- (U)(\$600) Spectral and Environmental Analysis: Develop capability for automatic interface and update with SPEDS/ICAP Integrated Product (SIIP) and Meteorological and Oceanography (METOC). Continued development of Tactical Decision Aids (TDAs) and COTS tactical analysis tools for incorporation into General Service (GENSER) and Sensitive Compartmented Information (SCI) Software for analyst workstations, Electronic Warfare Command Stations (EWCS), and supporting the Command and Control Warfare Center (C2WC). Incorporate new functional capability prioritized by Fleet users.
- (U)(\$875) Testing: Continue to perform systems testing on the integrated components of the Naval C4I architecture. Modernize test facilities to maintain capability to test newly developed software and architectures. Support the proof of concept testing in exercise environments of emerging technology in the C4I arena.

B. (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable

(U) RELATED RDT&E:PE 0604231N (Tactical Command Systems) GCCS-M Intelligence Applications.

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE:

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

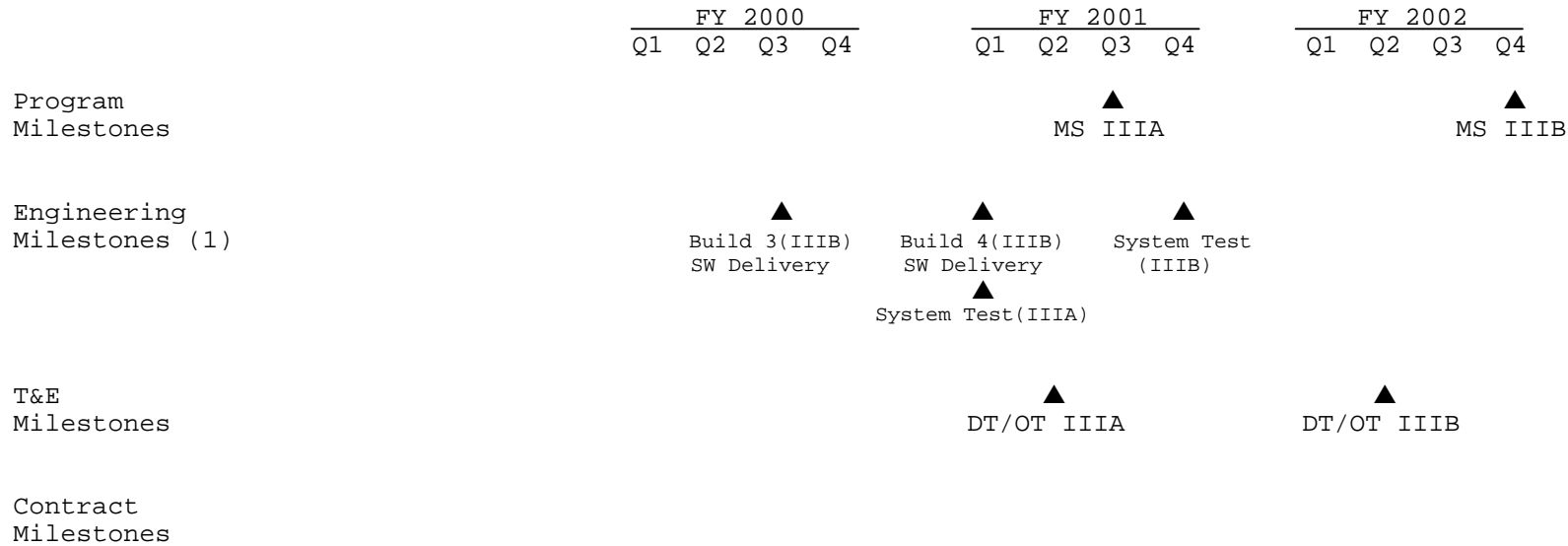
BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps



Note (1): Change in nomenclature from "GCCS-M 4.1 Drop" to "Build 3" and "Build 4" to reflect internal milestones for GCCS-M 4.x Development.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	Various	Various	29,700	5,219	Var.	3,041	Var.					
Software/Product Development	WX	SSC San Diego				2,500	10/01					
Software/Product Development	WX	SSC Charleston				1,000	10/01					
Subtotal Product Development	Various	Various	29,700	5,219	Var.	6,541	Var.					
Remarks:												
System Engineering	Various	Various	10,070	983	Var.	717	Var.					
Subtotal Support	Various	Various	10,070	983	Var.	717	Var.					
Remarks												

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0709

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Maritime Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01Cost	FY01 Award Date	FY02Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	PD	OPTEVFOR	1,090	0		0						
Subtotal T&E	PD	OPTEVFOR	1,090	0		0						
Remarks												
Program Management	Various	Various	7,288	500	Var.	500	Var.					
Subtotal Management	Various	Various	7,288	500	Var.	500	Var.					
Remarks												
Total Cost	Various	Various	48,148	6,702	Var.	7,758	Var.					

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Exhibit R-3, Project Cost Analysis

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Trusted Information Systems

(U) COST (Dollars in thousands)

PROJECT

NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
X2009	Trusted Information Systems (TIS) (Formerly JMCIS OED)	5,065	5,617	3,939						

A. (U) Trusted Information Systems (TIS) is a combination of the Ocean Surveillance Information System (OSIS) Evolutionary Development (OED) system, the Radiant Mercury (RM) system and multi-level security (MLS) web technologies. TIS provides the core on-line, automated, near-real time, multi-level secure, information analysis, dissemination, and receipt capabilities that enable Unified Commanders-in-Chief and Joint Task Force Commanders afloat and ashore to disseminate and receive critical operational and intelligence information with own forces and Coalition/Allied forces via tactical and record communications circuits. OED and RM are designated migration systems. OED provides for the analysis of intelligence information from multiple sources to produce a comprehensive report of foreign forces and potential hostile activity. The system is required to be able to generate multiple, automated near-real-time event-by-event (NRT EBE) data streams at various classification/releasability levels, tailorable to unique customer requirements and capable of being transmitted over multiple communications paths (including DSNET) simultaneously. In addition, it is required to provide near-real-time (NRT) all-source fusion, correlation and analysis tools (including robust graphics presentation and geospatial analysis capabilities), directly feeding automated reporting capabilities. OED provides positional data and operational intelligence to commanders at all levels. The data derived from this process is disseminated as an Operation Intelligence (OPINTEL) product to the operating forces for tactical threat warnings, decision making support, and support of Over-the-Horizon-Targeting. Radiant Mercury is a tool for the automated sanitizing, downgrading, and transliteration of formatted message traffic. A linchpin of network-centric warfare aboard afloat platforms, Radiant Mercury helps ensure critical Indications and Warning intelligence is provided quickly to operational decision-makers. This capability to move all-source intelligence-derived track information into the realm of the operational community significantly improves the situational awareness of tactical operators and planners. Additionally, it assists in providing operational information to intelligence and cryptologic analysts.

(U) TIS builds upon the foundation set by JMCIS OED project which uses the Joint Logistics Commander's Guidance of March 1987 on Evolutionary Acquisition (EA) as the strategy for future software development which includes a plan for incremental achievement of desired capability building on the core system provided by OBU Phases I and II. TIS is built on the foundation of JMCIS OED Phase III EA strategy, which provides a mechanism for adding future capabilities including the incorporation of proven fleet initiated prototypes.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X2009
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Trusted Information Systems

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$280) Began to implement, accredit and deploy MLS changes needed to support email-based and Defense Message Service (DMS) record message traffic.
- (U) (\$460) Developed and deployed wide area imagery, site, and characteristics databases using an object-oriented MLS commercial database package.
- (U) (\$760) Automated real time Indications and Warning/Situation Assessment capability to detect and auto alert users concerning movement patterns, complex threat conditions and other pre-defined spatial and data detection events.
- (U) (\$145) Upgraded system capabilities for providing tailored MLS support.
- (U) (\$420) Incorporated current state-of-the-art data correlation and data fusion software and hardware technology.
- (U) (\$3,000) Developed the Concept, Technical Feasibility and Prototype for the Integration of the Contiguous Connection Model (CCM) Information Analysis, Storage and Retrieval System into the OED MLS System. Performed the Integration, Provide Test and Certification of the enhanced OED MLS Knowledge Capable (OED MLS/KD) System.

2. (U) FY 2001 PLAN:

- (U) (\$558) Port MLS Capability to SUN based DII COE.
- (U) (\$285) Continue to implement, accredit and deploy MLS changes needed to support email-based and DMS record message traffic.
- (U) (\$500) Implement, accredit and deploy MLS changes needed to support MLS email and Network Guard technology.
- (U) (\$439) Update message encoders, decoders and correlation algorithms as required to meet formatted MSG standards and changes in sensor data feeds.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X2009
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Trusted Information Systems

- (U) (\$726) Continue to automate real time Indications and Warning/Situation Assessment capability to detect and auto alert users concerning movement patterns, complex threat conditions and other pre-defined spatial and data detection events.
 - (U) (\$313) Develop system interface capabilities as required for current releases for record communications systems with in an accreditable MLS baseline.
 - (U) (\$460) Develop untrusted client architecture using single level clients to evolve into a Multi-Level Security design.
 - (U) (\$336) Develop and implement improved tactical decision aids, and system alerting capabilities.
 - (U) (\$2,000) Continue to develop the Concept, Technical Feasibility and Prototype for the Integration of the Contiguous Connection Model (CCM) Information Analysis, Storage and Retrieval System into the TIS MLS System. Continue to perform the Integration, Provide Test and Certification of the enhanced TIS MLS Knowledge Capable (TIS MLS/KD) System.
3. (U) FY 2002 PLAN:
- (U) (\$500) Continue to port MLS Capability to SUN based DII-COE.
 - (U) (\$1,009) Continue to implement, accredit and deploy MLS changes needed to support MLS email and Network Guard technology.
 - (U) (\$370) Continue to update message encoders, decoders and correlation algorithms as required to meet formatted message standards and changes in sensor data feeds.
 - (U) (\$645) Continue to automate real time Indications and Warning/Situation Assessment capability to detect and auto alert users concerning movement patterns, complex threat conditions and other pre-defined spatial and data detection events.
 - (U) (\$313) Continue to develop system interface capabilities as required for current releases for record communications systems with in an accreditable MLS baseline.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X2009
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Trusted Information Systems

- (U) (\$550) Continue to develop and implement improved tactical decision aids, and system alerting capabilities.
- (U) (\$552) Continue to develop untrusted client architecture using single level clients to evolve a Multi-Level Security design.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
OMN 1C1C	1,300	1,053	1,275							

(U) RELATED RDT&E: Not applicable.

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604231N PROJECT NUMBER: X2009
PROGRAM ELEMENT TITLE: Tactical Command System PROJECT TITLE: Trusted Information Systems

C.(U) ACQUISITION STRATEGY: N/A

D.(U) SCHEDULE PROFILE:

	FY 2000				FY 2001				FY 2002			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Program Milestones												
Engineering Milestones												
T&E Milestones												
Contract Milestones												

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Trusted Information Systems

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	Radius	NAVSUP	32,354	4,772	Var.	3,234	Var.					
Software/Product Development	Various	Various	4,501	315	Var.	230						
Subtotal Product Development	Various	Various	36,855	5,087	Var.	3,464	Var.					
Remarks:												
System Engineering	WX	Various	8,268	425	Var.	400	Var.					
Subtotal Support	Various	Various	8,268	425	Var.	400	Var.					
Remarks												

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UNCLASSIFIED

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X2009

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: Trusted Information Systems

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	PD	OPTEVFOR	630	30	Var.	0	Var.					
Subtotal T&E	PD	OPTEVFOR	630	30	Var.	0	Var.					
Remarks												
Project Management	Various	Various	1,935	75	Var.	75	Var.					
Subtotal Management	Various	Various	1,935	75	Var.	75	Var.					
Remarks												
Total Cost	Various	Various	47,688	5,617	Var.	3,939	Var.					

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UNCLASSIFIED

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

(U) COST (Dollars in thousands)

PROJECT

NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
X0521 GCCS-M Intelligence Apps	6,607	6,495	6,596							

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: GCCS-M Intelligence Applications are an integrated set of Defense Information Infrastructure Common Operating Environment (DII COE) compliant segments designed to support tactical intelligence processing and reside on the Intelligence Shared Data Server (ISDS). The ISDS is the central database server for GCCS-M Afloat, the Command and Control Warfare Commander (C2WC) and tactical mission planning systems. Development of GCCS-M Intelligence applications for this data distribution includes dynamic updates of Naval Intelligence Database (NID) and military integration with digital map and imagery systems. The current GCCS-M Intel Apps effort includes providing intelligence data distribution to multiple shipboard warfighters via an analog video distribution system. Furthermore, the GCCS-M Intel Apps effort will integrate Radiant Mercury (RM) into the GCCS-M Afloat architecture to meet downgrading and releasability requirements. GCCS-M imagery applications provide for archiving, viewing and mensuration of still and video images. This effort is also continuing the transition to Commercial Off The Shelf (COTS) hardware and software as part of the current GCCS-M initiative to capitalize on the latest Web/PC industry/commercial technology. The GCCS-M Intel Apps effort is part of the Tactical Intelligence and Related Activities (TIARA) program, managed by the Secretary of Defense through the Assistant Secretary of Defense for C4I.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$350) Joint Planning Network (JPN) / Tactical Digital Information Links (TADILS) / Broadcasts: Migrated Intelligence Correlation Tools (e.g. Gale Lite, NRTI/Binocular) into GCCS-M, conforming to DII COE in order to meet validated fleet requirements.
- (U) (\$240) Threat Order of Battle (OOB) / Characteristics & Performance (C&P): Migrated Joint Deployable Intelligence Support System (JDISS) stand-alone intelligence system tools into a GCCS-M application, creating an integrated, afloat intelligence architecture.
- (U) (\$470) JPN / TADILS / Broadcasts: Continued integration of Radiant Mercury (RM) capability into GCCS-M to meet the high priority Fleet requirement of C4 data downgrading and releasability for coalition interoperability. RM is a certified, accreditable, automated method to downgrade highly sensitive data over security levels.
- (U) (\$780) Threat OOB / C&P: Continued evolving Navy-USMC Team unique intelligence and intelligence-related database support for GCCS-M and Marine Air-Ground Task Force(MAGTF)/C4I/Expeditionary Warfare applications as required outside Modernized Intelligence Database capability (MIDB).
- (U) (\$1,000) Imagery / Video Processing: Continued development, integration and testing of advanced digital imagery server and Navy-Marine Team unique client applications to keep pace with evolving National Imagery and Mapping Agency (NIMA), Defense Airborne Reconnaissance Office (DARO) and Naval Reconnaissance Office (NRO) imagery architectures.
- (U) (\$1,144) Threat OOB / C&P: Continued developing, integrating and testing MIDB (v 2.0, 3.0, 4.0 etc.) based ISDS (General Service (GENSER) and Sensitive Compartmented Information (SCI)) and associated intelligence applications in accordance with GCCS-I3 evolutionary directions and in conjunction with Cryptologic/C2W and other Warfare Commander developments.
- (U) (\$500) Threat OOB / C&P: Continued implementation of the MIDB replication in GCCS-M to meet the validated Fleet requirements to generate and maintain a consistent intelligence picture among general purpose Command and Control systems, mission planning systems, and combat direction systems while reducing numbers of databases which have to be maintained.
- (U) (\$300) Useability: Migrated development of Intelligence and Imagery segments to meet fleet IT21 requirements (PC/NT) and DII COE.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

- (U) (\$400) Useability: Implemented new fleet validated GCCS-I3 Intelligence Functional Working Group and Copernicus Requirements Working Group (CRWG) requirements. Developed an automated mechanism to register and catalogue software submissions for all GCCS-I3 development, integration and test software builds.
- (U) (\$520) Imagery / Video Processing: Developed Navy portion for imagery access and manipulation components of the Joint Targeting Toolbox (JTT), a proposed uniform set of targeting applications validated by all Services.
- (U) (\$400) Threat OOB / C&P: Continued development and test enhancements to unit level GCCS-M Afloat intelligence capabilities, including access to imagery and associated support data; e.g., Characteristics & Performance (C&P).
- (U) (\$253) Testing: Continued testing of OBU/OED intelligence capability with GCCS-M development; provided OED-unique intelligence tools afloat.
- (U) (\$250) Testing: Developed and tested GCCS-M Intel database applications (MIDB interfaces) with JTT.

2. (U) FY 2001 PLAN:

- (U) (\$490) JPN / TADILS / Broadcasts: Continue integration of Radiant Mercury (RM) capability into GCCS-M to meet the high priority Fleet requirement of C4 data downgrading and releasability for coalition interoperability. RM is a certified, accreditable, automated method to downgrade highly sensitive data over security levels.
- (U) (\$640) Threat OOB / C&P: Continue evolving Navy-USMC Team unique intelligence and intelligence-related database support for GCCS-M and MAGTFC4I/Expeditionary Warfare applications as required outside MIDB capability.
- (U) (\$1,000) Imagery / Video Processing: Continue developing, integrating and testing advanced digital imagery server and Navy-Marine Team unique client applications to keep pace with evolving NIMA, DARO and NRO imagery architectures.
- (U) (\$1,130) Threat OOB / C&P: Continue developing, integrating and testing MIDB (v 2.0, 3.0, 4.0 etc.) based ISDS (GENSER and SCI) and associated intelligence applications in accordance with GCCS-M Intel Apps and GCCS-I3 evolutionary directions and in conjunction with Cryptologic/C2W and other Warfare Commander developments.
- (U) (\$500) Threat OOB / C&P: Complete development of the Modernized Integrated Database (MIDB) replication in GCCS-M to satisfy validated Fleet requirements to generate and maintain a consistent intelligence picture among

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

general purpose C2 systems, mission planning systems, and combat direction systems while reducing numbers of databases to be maintained.

- (U) (\$325) Useability: Continue migration development of Intelligence and Imagery segments to meet fleet IT21 requirements (PC/NT) and DII COE.
- (U) (\$654) Useability: Continue development of fleet validated GCCS-I3 Configuration Control Board (CCB), Intelligence Functional Working Group (IFWG) and Copernicus Requirements Working Group (CRWG) requirements. Develop an automated mechanism to register and catalog software submissions for all GCCS-I3 development, integration and test software builds.
- (U) (\$500) Imagery / Video Processing: Continue development of the Navy portion for imagery access and manipulation components of the Joint Targeting Toolbox, a uniform set of targeting applications validated by all Services.
- (U) (\$600) Threat OOB / C&P: Continue development and test enhancements to unit level GCCS-M Afloat intelligence capabilities including access to imagery, associated support data and Electronic Intelligence (ELINT) correlation factors.
- (U) (\$200) Testing: Continue testing of OBU/OED intelligence capability with GCCS-M development; provide OED-unique intelligence tools afloat.
- (U) (\$206) Imagery / Video Processing: Continue to develop and test GCCS-M Intel database applications (MIDB interfaces) with Joint Targeting Toolbox.
- (U) (\$250) Testing: Develop and test the GCCS-M integration of Common Operating Picture (COP) and MIDB.

3. (U) FY 2002 PLAN:

- (U)(\$185) Combat Systems Interface: Provide increased functionality and expand the performance envelope in the Intelligence and Imagery applications to support capabilities in the DII COE, including real-time, updates to mapping, communication, and track management tools of particular interest to the combat systems community.
- (U)(\$1,115) Imagery / Video Processing: Continue migration of the imagery applications that support the Integrated Imagery and Intelligence (I3) product line to the NT platform. Meet fleet requirements for integrating order of battle maintenance, imagery analysis, and intelligence support to the Common Operational Picture into commercial COTS environments to facilitate easy integration with IT-21 platforms and products.

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

Integrate capability into GCCS-M to support UAV data visualization and analysis. Continue to research and integrate Geospatial Information Services (GI&S) into GCCS-M, ensuring compatibility with NIMA developed systems with links to the applicable Imagery and Geospatial libraries. Develop interfaces to other imagery archives. Incorporate emerging requirements validated by Fleet operators through the CRWG requirements process. Develop capabilities that utilized enhanced features of the DII COE.

- (U)(\$2,595) Threat OOB and C&P: Meet fleet requirements identified and prioritized at the CRWG for integrating order of battle maintenance, and intelligence support to the Common Operational Picture into commercial COTS environments to facilitate easy integration with IT-21 platforms and products. Provide Intel application research and support for IT-21 workstations. Provide data fills for the Intel database. Implement and enhance a fully functional MIDB interface mechanism that enables GCCS-M intelligence applications, combat systems, and mission planning systems to access data within MIDB without having to change their software architecture with each MIDB release from the Defense Intelligence Agency (DIA). Provide increased functionality in the Intelligence and Imagery applications to support capabilities in the DII COE, including real-time, updates to mapping, communication, and track management tools. Integrate Intel data into the SCI enclave.
- (U)(\$280) Spectral and Environmental Analysis: Develop and enhance Intel data sources for C2WC.
- (U)(\$616) JPN / TADIL / BROADCASTS: Enhance capability to attach tactically relevant intelligence data to near real-time tracks that are distributed via the Common Operational Picture pre requirements generated through the CRWG process. Enhance Intelligence and Imagery subscription methodologies to support disadvantaged users. Incorporate COTS Internet tools to enable users to use IT-21 infrastructure to obtain a subset of finished intelligence data via the web. Provide the capability to distribute intelligence data cross-referenced to imagery that will enable users to view and edit, OOB data, characteristics and performance data, and imagery over the WAN and distribute those changes through the COP to joint intelligence centers. Integrate the Special Intelligence (SI) correlation functions into the core of DII COE, enabling closer integration with the other correlation functions that currently exist in the Joint baseline.
- (U)(\$775) Targeting / Land Track: Update the Naval Strike Warfare Planning product SPF-Lite per Fleet requirements identified at the CRWG. Continue integration of the Joint Targeting Toolbox products into GCCS-M, providing seamless capability to edit and view the targeting tables in combination with the Order of Battle (OOB) maintenance function performed in GCCS-M and provide a single set of interfaces within JTT for creation of target lists, selection of imagery, creation of task collection, plans, etc.
- (U)(\$1,030) Testing: Perform systems testing on the integrated components of the GCCS-M Intel architecture.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands) N/A

(U) RELATED RDT&E:PE 0604231N (Tactical Command Systems) GCCS-M Maritime Applications

C. (U) ACQUISITION STRATEGY:

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

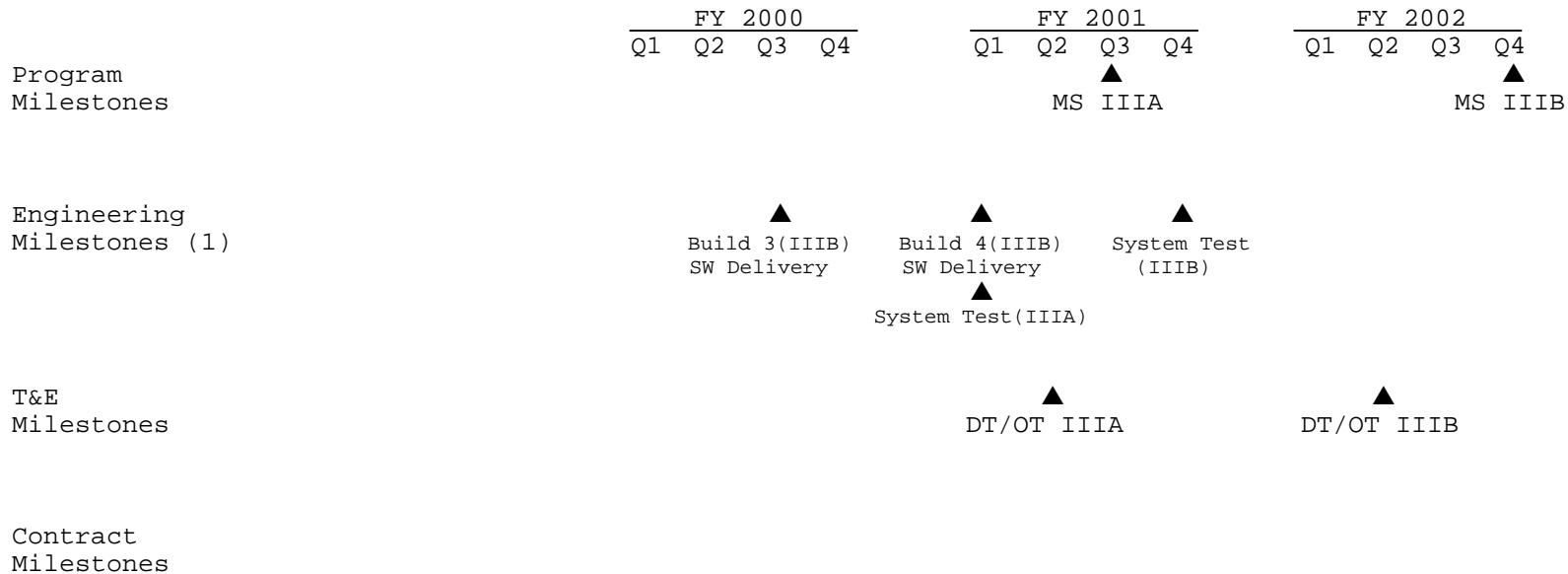
PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

D. (U) SCHEDULE PROFILE:



Note (1): Change in nomenclature from "GCCS-M 4.1 Drop" to "Build 3" and "Build 4" to reflect internal milestones for GCCS-M 4.x Development.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	Various	Various	12,503	3,704	12/00	602	12/01					
Software/Product Development	CPFF	PRC				3,000	10/01					
Software/Product Development	WX	SSC San Diego				800	10/01					
Software/Product Development	WX	SSC Charleston				1,500	10/01					
Subtotal Product Development	Various	Various	12,503	3,704	12/00	5,902	12/01					
Remarks:												
System Engineering	Various	Various	14,862	2,771	12/00	654	12/01					
Subtotal Support	Various	Various	14,862	2,771	12/00	654	12/01					
Remarks:												
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract

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Exhibit R-3, Project Cost Analysis

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FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X0521

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Intel Apps

Operational Test & Evaluation	PD	OPTEVFOR	2,056	0		0						
Subtotal T&E	PD	OPTEVFOR	2,056	0		0						
Remarks												
Project Management	CPFF	Various	603	20	Var.	40	Var.					
Travel	WR	HQ	1,411	0	Var.	0	Var.					
Subtotal Management	Various	Various	2,014	20	Var.	40	Var.					
Remarks												
Total Cost	Various	Various	31,435	6,495	Var.	6,596	Var.					
Remarks												

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Exhibit R-3, Project Cost Analysis

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
X2305	GCCS-M Common Apps									
	11,602	11,850	11,014							

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The GCCS-M Common Apps program contains the fundamental building blocks and common applications for all fielded Global Command and Control System (Maritime) C4I systems in the Navy, Marine Corps, and Coast Guard. It is the Navy's tactical implementation of the Global Command and Control System (GCCS) which provides the warfighter: (1) timely access to battlefield information, and (2) state-of-the-art information processing capability to support the Command and Control of maritime forces through a combination of communications, intelligence and combat system interfaces.

The Navy Common Operating Environment program is a core function of the GCCS-M Common Apps in that it serves as the system integration point for Command and Control systems in the Naval services. The program has the responsibility of working with developers throughout the Navy to incorporate the requirements of their users so that they might quickly and efficiently integrate and transform present stovepipe capabilities into an interoperable C4I architecture. As the number of legacy systems migrating to the Defense Information Infrastructure Common Operating Environment (DII COE) continues to grow, resources for rapidly folding them into the service extensions must keep pace as the complexity and size of the COE grows. As a product of evolutionary acquisition, the Navy COE will continue to evolve with the DII COE, new technology, and COMMERCIAL-OFF-THE-SHELF (COTS) products.

GCCS-M Common Apps includes all C4I applications required to fully support Navy joint interoperability in the littoral environment, and includes all common functions such as track database management, message processing, display implementation, correlation and system architecture migration in order to ensure a coherent and consistent implementation of C4I architectures in the Fleet.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2305

PROJECT TITLE: GCCS-M Common Apps

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$500) Architecture: Began implementation of Real-time capabilities into DII COE in order to support migration of high performance systems to GCCS-M architecture.
- (U) (\$200) Training: Continued development of program documents and data.
- (U) (\$400) Architecture: Evolved the USN C4I messaging architecture to incorporate emerging DII-COE based messaging components (e.g. Communication Message Processor (CMP), Defense Message System (DMS), etc.)
- (U) (\$600) Useability: Defined and established the PC/NT Common Operating Environment; initiating the migration of Unix based segments and applications to the NT COE.
- (U) (\$300) Architecture: Defined and developed the system architecture and products to evolve USN C4I systems from a Force Over-the-Horizon Track Coordinator (FOTC) / Officer in Tactical Command Information Exchange Subsystem (OTCIXS) / BGBDM based network towards one that takes advantage of Terminal Control Protocol(TCP)/Internet Protocol(IP), LANs, and WANs (Joint Maritime Communications Systems (JMCOMS) / Advanced Digital Network System (ADNS), and Secret Internet Protocol Routing Network (SIPRNET)).
- (U) (\$200) Useability: Implemented Information Security (INFOSEC) products into the C4I software architecture.
- (U) (\$300) Joint Planning Network (JPN)/ Tactical Digital Information Links (TADILS) / Broadcasts: Investigated DII COE compliant multi-source and multi-sensor correlation and fusion software segment development to Navy, Joint, and coalition Common Operational Pictures (COPs).
- (U) (\$175) Imagery / Video Processing: Developed and implemented integrated shipboard architectures which utilize a common set of National Imagery and Mapping Agency (NIMA) product services / servers.
- (U) (\$400) JPN / TADILS / Broadcasts: Developed and implemented core capabilities associated with strategic and tactical C4I management of Theater Battle Management (TBM) data and tools for decision-making and COP fusion of (TBM) data.
- (U) (\$650) Useability: Integrated GCCS-Joint segments into GCCS-M.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U) (\$175) JPN / TADILS / Broadcasts: Developed and implemented Mil-std-2525A and supplemental symbology to support COP fusion and display.
- (U) (\$332) JPN / TADILS / Broadcasts: Developed and implemented interoperable architectures for integration of Position Location Information (PLI) data in the COP.
- (U) (\$1,720) Architecture: Implemented DISA provided DII COE for Navy Customers, for each DII COE build, including rollup of operating system/kernal, application of patches/fixes, development and application of maritime extensions of software fixes, and implementation of Navy-unique Engineering Change Proposals (ECPs) in DII COE.
- (U) (\$500) Architecture: Developed the 3-tier architecture (Data Servers, application servers, display & presentation) to support the transition of the USN C4I from the current client/server model. This will streamline the data maintenance function to data centers, and improve timeliness and accuracy of data to the warfighter.
- (U) (\$200) Targeting / Land Track: Enhanced Moving Target Indicator (MTI) autotrack generation capabilities for JSTARS data.
- (U) (\$800) JPN / TADILS / Broadcasts: Completed 2-way TADIL J and incorporate Multi-TADIL correlation.
- (U) (\$200) JPN / TADILS / Broadcasts: Incorporated Theater Battle Management Core System (TBMCS) aboard USN Flagships (LCC, AGF, CV/CVN) and developed the required interfaces, procedures to interoperate with GCCS-M.
- (U) (\$100) Aircraft Mission Planning / TACMOBILE: Developed/Enhanced interface support for Mission Planning Systems.
- (U) (\$250) Useability: Incorporated USMC MAGTF C4I based systems aboard USN amphibious and command ships (LCC, AGF, etc.). Developed Conops/procedures and interfaces to support joint amphibious warfare for embarked/disembarked USMC elements.
- (U) (\$250) Useability: Developed/Enhanced/Incorporated tools and functionality that supports joint and coalition C4I warfare. Developed Conops/procedures/tests/exercises that implement coalition interoperability.
- (U) (\$250) Testing: Developed interfaces/Conops/procedures to take advantage of the LAN/WAN commonizations provided by JMCMS/ADNS and performed land and sea based testing of the integrated C4I architecture.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U) (\$100) Spectral and Environmental Analysis: Developed capability for automatic interface and updates with SPEDS/ICAP Integrated Product (SIIP) and Meteorological and Oceanography (METOC).
- (U) (\$150) Imagery / Video Processing: Investigated latest COTS hardware and software to implement a digital video system solution to accomplish full motion video transmission intra-ship, inter-ship, and ship to shore.
- (U) (\$250) Architecture: Designed/Developed security architecture for Naval C4I systems.
- (U) (\$100) Useability: Continued hardware design & development, including investigation of space saving COTS available GCCS-M compatible hardware for use in confined spaces on board submarines, and investigation of latest COTS display and large screen projector technology for use in GCCS-M.
- (U) (\$1,000) Testing: Semi-annual testing of each DII COE build received from DISA, documentation and Configuration Management (CM) of required Software Trouble Report (STR) processes, and distribution to Navy DII COE customers.
- (U) (\$300) Testing: Supported the proof of concept testing in exercise environments of emerging technology in the C4I arena.
- (U) (\$700) Testing: Performed systems testing on the integrated components of the Naval C4I architecture.
- (U) (\$500) Testing: Designed and developed systems documentation to support test, evaluation, and fielding of C4I systems.

2. (U) FY 2001 PLAN:

- (U) (\$275) Architecture: Continue implementation of Real-time capabilities into DII COE in order to support migration of high performance systems to GCCS-M architecture, specifically addressing correlation algorithms based on kinematics.
- (U) (\$170) Architecture: Continue to evolve the USN C4I messaging architecture to incorporate emerging DII-COE based messaging components (e.g. CMP, DMS, etc.).
- (U) (\$650) Useability: Redefine and evolve the PC/NT Common Operating Environment. Continue the migration of Unix based segments and applications to the NT COE to support IT-21.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U) (\$1,085) Architecture: Refine and continue to develop the system architecture and products to evolve USN C4I systems from a FOTC/OTCIIXS/BGBDM based network towards one that takes advantage of TCP/IP, LANs, and WANs (JMCOMS/ADNS, and SIPRNET).
- (U) (\$190) Useability: Implement INFOSEC products into the C4I software architecture.
- (U) (\$410) JPN / TADILS / Broadcasts: Implement DII COE compliant multi-source and multi-sensor correlation and fusion software segment to support Navy, Joint, and coalition requirements.
- (U) (\$120) Imagery / Video Processing: Continue to develop and implement integrated shipboard architectures, which utilize a common set of NIMA product services/servers, including geo-spatially distributed off-ship libraries.
- (U) (\$220) JPN / TADILS / Broadcasts: Continue to develop and implement core capabilities associated with strategic and tactical C4I management of Theater Battle Management (TBM) data and tools for decision-making and COP fusion of TBM data.
- (U) (\$90) JPN / TADILS / Broadcasts: Continue to develop and implement Mil-std-2525A and supplemental symbology to support COP fusion and display, focusing on completion of 3D symbol sets.
- (U) (\$390) Useability: Continue to develop and integrate GCCS (Joint) segments into GCCS-M.
- (U) (\$300) Targeting / Land Track: Continue to develop and implement interoperable architectures for integration of Position Location Information (PLI) data in the COP, developing correlation algorithms required to correlate/de-correlate land based tracks in a joint battle environment.
- (U) (\$2,409) Architecture: Continue to implement DISA provided DII COE for Navy Customers, for each DII COE build, including rollup of operating system/kernel, application of patches/fixes, development and application of maritime extensions of software fixes and implementation of Navy-unique requirements.
- (U) (\$320) Architecture: Continue to develop the 3-tier architecture (3TA)(Data Servers, application servers, display & presentation) to support the transition of the USN C4I from the current client/server model. This will streamline the data maintenance function to data centers, and reduce overall system administration tasks/costs. The 3TA will enable the thin client capability required by the warfighter. Effort to support the evolution of the DII COE architecture to 3TA.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U) (\$190) Targeting / Land Track: Enable JSTARS/GCCS-M connectivity, addressing high bandwidth communication pipes such as Common High-Bandwidth Data Link (CHBDL).
- (U) (\$800) JPN / TADILS / Broadcasts: Continue TADIL interoperability development as determined by CRWG and joint requirement efforts.
- (U) (\$130) JPN / TADILS / Broadcasts: Continue to incorporate TBMCS aboard USN Flagships (LCC, AGF, CV/CVN) and develop the required interfaces, procedures to interoperate with GCCS-M.
- (U) (\$195) Aircraft Mission Planning / TACMOBILE: Continue to develop/enhance Interface support for Mission Planning.
- (U) (\$160) Useability: Continue to incorporate USMC MAGTF C4I based systems aboard USN amphibious and command ships (LCC, AGF, etc.). Develop Conops/procedures and interfaces to support joint amphibious warfare for embarked/disembarked Marine Corp. elements.
- (U) (\$140) Useability: Continue to develop/enhance/incorporate tools and functionality that supports joint and coalition C4I warfare. Develop Conops/procedures/tests/exercises that implement coalition interoperability.
- (U) (\$160) Testing: Continue to develop interfaces/Conops/procedures to take advantage of the LAN/WAN communications provided by JMCMS/ADNS. Perform land and sea based testing of the integrated C4I architecture.
- (U) (\$80) Spectral and Environmental Analysis: Continue to develop capability for automatic interface and update with SIIP and METOC.
- (U) (\$256) Testing: Develop, integrate, test, and prototype a COTS based digital video system to accomplish full motion video transmission inter-ship, intra-ship, and ship-to-shore.
- (U) (\$415) Architecture: Continue to design/develop Security Architecture for Naval C4I systems.
- (U) (\$110) Useability: Develop a miniaturized prototype GCCS-M hardware suite for use on submarines. Investigate latest COTS display and large screen projector technology for use in GCCS-M C3I system.
- (U) (\$1,065) Testing: Semi-annual testing of each DII COE build received from DISA, documentation and Configuration Management (CM) of required Software Test Report (STR) processes, and distribution to Navy DII COE customers.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2305

PROJECT TITLE: GCCS-M Common Apps

- (U) (\$260) Testing: Support the proof of concept testing in exercise environments of emerging technology in the C4I arena.
- (U) (\$850) Testing: Perform systems testing on the integrated components of the Naval C4I architecture.
- (U) (\$410) Testing: Design and develop systems documentation to support test, evaluation, and fielding of C4I systems.

3. (U) FY 2002 PLAN:

- (U)(\$305) Aircraft Mission Planning / TACMOBILE: Continue to develop/enhance/interface aircraft mission planning systems. Enable mission planning or mission routes and plans to be displayed on GCCS-M along with other threat and blue force data. Continue to incorporate TBMCS and develop the required interfaces and procedures that interoperate with GCCS-M.
- (U)(\$1,228) Architecture: Continue to develop the N-tier architecture to support the transition of the USN C4I from the current client/server model. The N-tier will enable the thin client capability required by the warfighter. Provide security infrastructure that will support SI and Collateral levels. Research and implement a public key exchange capability that enables internet based applications such as web, e-mail, newsgroups to access a wide range of data over the DoD enterprise and maintain consistency with the DoD Public Key Infrastructure (PKI) policy. Incorporate development efforts for emerging COTS products.
- (U)(\$255) Employment Scheduling / WSM: Provide employment scheduling capabilities in support of coalition/Joint operations.
- (U)(\$355) Readiness: Provide readiness capabilities, which integrate with Joint and coalition forces, including integration with GCCS-Joint, JOPES, and similar theater-level C4I systems.
- (U)(\$539) Combat Systems Interface: Provide C4I support of combat systems interfaces. Continue development of track management/correlation/merge processing as specified in WS-19702/1 to enable full exchange of tracks between GCCS-M, Aegis, Common Cover & Deception (C&D), Advanced Combat Direction System (ACDS), Ship Self Defense System (SSDS), Naval Fire Control System (NFCS) and other emerging combat systems. Modify track exchange architecture to promote orderly merging of OTH data between ATWCS/TTWCS/GCCS-M, including support for backwards compatibility of track databases. As required, provide support for Ground Order of Battle data to the combat system. Provide support for combat systems to utilize GCCS-M subscription methodologies to obtain

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2305

PROJECT TITLE: GCCS-M Common Apps

tailored intelligence and imagery products for analysis and display. Ensure full tactical data link message sets can be transmitted and received across the interface.

- (U)(\$3,749) JPN / TADILS / BROADCASTS: Support Joint/coalition warfare by developing an interoperable & scalable C4I system. Implement expanded TMS motion models to support static and stationary contact reporting in the TIBS segment, and incorporate emerging TIBS requirements identified by the CRWG. Modernize TIBS to support the data feeds provided by the IBS. Provide receive and transmit capability in the TIBS segment, to include transmit capability. Integrate and support interfaces to the Joint Tactical Terminal Control Client. Utilize data compression and improved multicast techniques to reduce the amount of bandwidth required to disseminate the COP from 16KBS to 8KBS, including support for new Fleet requirements emerging from the CRWG. Enhance and improve COP Sync Tools per CRWG direction, including implementation of a capability for CST to operate in a Quality of Service mode so that multicast IP transmissions can be managed over the IT-21 ATM backbone. Provide an automated mechanism for replicating web and newsgroup data from ship's servers to the Network Operations Centers (NOCs). Web-based replication mechanisms will enable tactically relevant data to be assessed in near real-time by shore commands without using ship bandwidth, compromising firewall security, or placing additional burdens on the NOC or ship. Continue to implement DISA provided DII COE for Navy Customers, for each DII COE build, including rollup of operating system/kernel, application of patches/fixes, development and application of maritime extensions of SW fixes, and implementation of Navy-unique requirements. Develop track management capabilities that utilize emerging capabilities of the DII/COE and COTS products. Support promulgation of the COP via industry standard COTS infrastructures.
- (U)(\$2,146) Targeting / Land Track: Provide enhanced capability for the Naval JSTARS Interface segment per Fleet direction at the CRWG, with full utilization of the Joint Mapping Toolkit. Incorporate the ability to provide radar services requests to the JSTARS aircraft. Integrate fire control call for fire capability into the JTT/GCCS-M/JSIPS-N targeting architecture. Expand ELINT data processing in GCCS-M to process specific emitter id data provided by enhanced sensor packages aboard P-3 AIP, U-2 and other national assets. COMEXT/MAREXT: Continue to integrate the Moving Target Exploitation (MTE) capability into JSTARS Interface, providing the ability to automatically initiate and maintain tracks on potential targets. Integrate Joint Collaborative products into GCCS-M to enable analysts to exchange application and text data over IP communications.
- (U)(\$833) Testing: Support the proof of concept testing in exercise environments of emerging technology in the C4I arena. Perform systems testing on the integrated components of the Naval C4I architecture.
- (U)(\$634) Theater Battle Management (TBM): Continue to improve Tactical Information Broadcast System (TIBS)/Integrated Broadcast System (IBS) TBM processing. Support coalition TBM environment. As required, provide support forwarding TBM data to the combat system.

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

- (U)(\$970) Useability: (COMEXT/MAREXT) Develop and enhance an Enterprise Management capability within GCCS-M to enable remote monitoring and inventory of network and computing assets associated with the system. Enable fleet engineering activities and administrators to use enterprise management tools to remotely update software packages on PCs over the LAN, decreasing administrative burden and staffing requirements. Provide ability to translate between the two environments, as well as the ability for tactical systems to exchange data updates over both mechanisms.

B. (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable

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Exhibit R-2a, Project Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

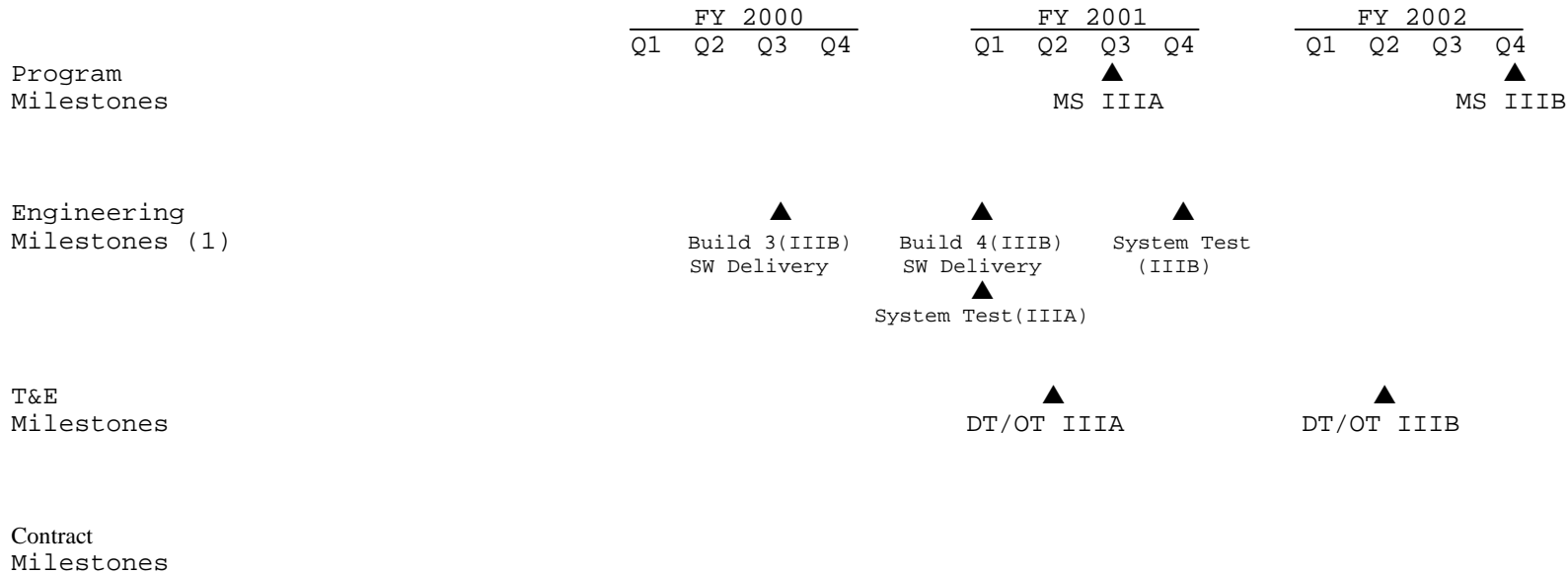
PROJECT NUMBER: X2305

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: GCCS-M Common Apps

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE:



Note (1): Change in nomenclature from "GCCS-M 4.1 Drop" to "Build 3" and "Build 4" to reflect internal milestones for GCCS-M 4.x Development.

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Exhibit R-2a, Project Justification

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FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2305

PROJECT TITLE: GCCS-M Common Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development	CPFF	INRI, Reston, VA	7,275	3,677	10/00	3,200	10/01					
Software/Product Development	WX	SSC-San Diego	1,116	1,180	10/00	2,500	10/01					
Software/Product Development	CPFF	Delfin	1,400	1,216	10/00	0	10/01					
Software/Product Development	Various	Various	9,297	1,702	10/00	2,364	10/01					
Subtotal Product Development	Various	Various	19,088	7,775	10/00	8,064	10/01					
Remarks:												
System Engineering	WX	SSC-San Diego	800	376	10/00	420	10/01					
System Engineering	CPFF	INRI, Reston, VA	718	242	10/00	250	10/01					
System Engineering	Various	Various	2,274	377	10/00	402	10/01					
Subtotal Support	Various	Various	3,792	995	10/00	1,072	10/01					
Remarks												

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Exhibit R-3, Project Cost Analysis

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FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2305

PROJECT TITLE: GCCS-M Common Apps

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	PD	OPTEVFOR	150	225	10/00	225	10/01					
Operational Test & Evaluation	Various	NTCSI	60	0	10/00	0	10/01					
Developmental Test & Eval.	WX	SSC-SD	1,700	1,880	10/00	730	10/01					
Developmental Test & Eval.	Various	Various	100	310	10/00	248	10/01					
Subtotal T&E			2,010	2,415	10/00	1,203	10/01					
Remarks												
Project Management	Various	Various	560	525	Var.	525	Var.					
Travel	Various	Various	200	140	Var.	150	Var.					
Subtotal Management			760	665	Var.	675	Var.					
Remarks												
Total Cost	Various	Various	25,650	11,850	Var.	11,014	Var.					

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Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT)

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2306 Naval Simulation System	2,785	5,192	5,033							

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Naval Simulation System (NSS) provides a capability to simulate the execution of all Naval Warfare including Operations Other Than War to be used for a number of related purposes. Fleet Command Centers, both ashore and afloat will use this capability for Course of Action Assessment; that is, to assess the effectiveness of operational plans with respect to measures defined by the fleet planner. NSS also supports fleet operations by providing a capability to inject simulated platform, system, or commander level entities into real world Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) systems, and by providing automated tools for conducting post-exercise analyses. Acquisition Planners in OPNAV will use this capability to conduct requirements analysis and cost effectiveness analysis for new Naval systems. NSS provides a comprehensive ability to simulate and assess Naval and joint CONOPS and system/platform/force level capabilities. NSS explicitly accounts for C4ISR interactions among all Warfare Mission Areas (WMAs). In each of these applications, NSS provides detailed analyses of performance including traceability of the warfighting outcome to specific components of the "sensor to decision-maker to shooter" architecture.

The Naval Simulation System will also support Command Level training for operational forces at the Task Force or Battlegroup level. To be accessible to fleet planners, the Naval Simulation System will be integrated into the Global Command and Control System (GCCS), both afloat and ashore configurations. In addition, the Naval Simulation System will support distributed computing on multiple High Performance Computers connected together on a network such as the Defense Information Infrastructure and Fleet Operational Communication Links at multiple classification levels. The same networks that are used to provide access to distributed computing will also be used for Distributed Collaborative Planning by means of which planners at different sites with responsibility for different aspects of the plan can work together collaboratively to produce a single coherent plan. This collaborative planning capability will be used to support Joint Planning between different service components. The Naval Simulation System will undergo Verification and Validation during its design and implementations phases, and will be Accredited for each intended major application. This effort funds the development and maintenance of the Naval Simulation System and the infrastructure of subject matter experts needed for ongoing Verification, Validation, and Accreditation (VV&A) and Configuration Control Management.

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Exhibit R-2a, Budget Item Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT)

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$1,544) Performed software development to make NSS Model Engine, Object Oriented Database, Object Oriented Database Management System, and Campaign Analysis Tool (CAT) Graphical User Interface (GUI) DII COE compliant. Designed Generic NSS Model Engine Application Programmer Interface (API). Developed and factory tested Targeting Management System (TMS) enhancements for integration into NSS. Executed factory testing on all NSS segments components for DII COE compliance. Resolved over 100 DII COE issues. Initiated design interface with NTCS-A Integrated Tactical Environment/Tactical Environmental Data Server (NITES/TEDS GCCS-M) segments, Commander's Analytic and Planning Simulation (CAPS) GCCS segment, and JMV (GCCS-M map server).
- (U) (\$295) Conducted numerous ORD reviews with OPNAV and Fleet. (Draft ORD currently in review by N62). Initiated development of concepts of operations (CONOPS) for MIW functionality module and planning tool.
- (U) (\$425) Made significant improvements and enhancements to NSS build v2.1.7 including scenario building and checking. Conducted factory testing to certify v2.1.7 for deployment on 5 Jan 00. Prepared Design Decision Brief (DDB) for NSS builds v3.0 and v3.1.
- (U) (\$101) Initiated task to improve runtime. Drafted a DDB to improve user friendliness of GUI.
- (U) (\$270) Supported NSS software Configuration Control Board. Implemented and tested over 80% CPF and Global 00 Software Change Requests (SCRs).
- (U) (\$150) Supported FBE-H planning. Initiated establishment of Cooperative, Research and Development Agreement (CRADA) to establish relationships with commercial NSS users. Provided management support, travel, and materials. Paid all required COTS licenses including Object Store Database Management System, SIPRNET and GCCS-M fees. Developed ACAT III documentation including draft Test and Evaluation Master Plan (TEMP) and draft Acquisition Program Baseline (APB).

2. (U) FY 2001 PLAN:

- (U) (\$640) Update NSS Segmentation on GCCS-M. Conduct independent testing and integration of the NSS model engine, Object Oriented Database, Object Oriented Database Management System, and Campaign Analysis Tool (CAT) GUI for integration into GCCS-M. Conduct independent testing of the generic NSS model engine Application

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Exhibit R-2a, Budget Item Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT)

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

Programmer Interface (API), the JMV (GCCS-M map server) interface to GCCS-M and TMS. Update all documentation including user's manual.

- (U) (\$264) Complete development of C4ISR functionality in support of Mine Warfare (MIW), Theater Missile Defense (TMD) and Strike Warfare (STK).
- (U) (\$250) Complete development of STK and TMD functionality modules. Improve NSS Joint Forces Air Component Commander (JFACC) and Theater Ballistic Missile Defense (TBMD) Course of Action (COA) planning tools. Complete NITES/TEDS, CAPS, and JMV, and collaborative planning tool integration into NSS.
- (U) (\$674) Initiate Mine Warfare (MIW) model engine functionality module and MIW COA planning tool. Initiate development of AntiSubmarine Warfare (ASW) functionality module and ASW COA planning tool. Continue development of Logistics (LOG) functionality module.
- (U) (\$160) Initiate development of Air Warfare (AW) functionality module and AW COA planning tool.
- (U) (\$225) Initiate development of Surface Warfare (SuW) functionality module and SuW COA planning tool.
- (U) (\$300) Support VV&A Subject Matter Expert (SME) activities. Include SME review of all conceptual models and code development.
- (U) (\$261) Develop DDB for run time improvement. Implement Run-time improvement technology as specified by DDB.
- (U) (\$190) Complete Integration of GCCS-M Operational Databases including Common Operational Picture (COP), and Commanders' Guidance into NSS.
- (U) (\$410) Initiate integration of GCCS-M Environmental Databases including Atmospheric, Terrain databases, Electromagnetic and Littoral databases into NSS.
- (U) (\$308) Support JTFEXs 01. Support Naval Post Graduate School (NPGS) Fires Analysis project and FBEs 01 planning, wargaming, and experimentation.
- (U) (\$230) Add/improve the interfaces between NSS and similar simulation systems from other services to improve interoperability with other services for an improved Joint Simulation capability to support Joint Assessments and Joint Command Level Training.

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Exhibit R-2a, Budget Item Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT)

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

- (U) (\$125) Identify and import the standard/validated data and information needed to characterize the additional/improved warfare area representations directed by the NSS Configuration Control Board.
 - (U) (\$355) Support Integrated Product Teams (IPTs) addressing GCCS-M implementation issues and Integrated Development Teams (IDTs) addressing user based requirements. Implement Earned Value management system.
 - (U) (\$800) Support NSS Configuration Control Board. Conduct factory testing of the NSS builds v3.0, v3.1 for deployment certification. Develop DDBs for NSS builds v3.2 and v4.0. Implement and perform factory testing on all outstanding SCRs. Conduct independent testing of all newly developed software code.
3. (U) FY 2002 PLAN:
- (U) (\$822) Updates to NSS Segmentation on GCCS-M. Factory test and integrate AW, STK, MIW, TMD and ASW Warfare functionality modules and planning tools into GCCS-M. Interface NSS with the GCCS-M Distributive Collaborative Planning tool, CAPS, JMV, COP, and commander's guidance. Perform assessment to determine which GCCS-M Tactical Decision Aids (TDAs) are supportive of meeting NSS ORD requirements. Conduct testing of all newly developed software for DII COE compliance. Conduct independent testing on all newly developed software.
 - (U) (\$275) Complete development of C4ISR functionality in support of ASW, SuW and AW.
 - (U) (\$289) Complete development of Surface Warfare (SuW) functionality module and planning tool. Initiate development of Amphibious Warfare (AMW) functionality module and planning tool. Initiate development of Information Warfare (IW) functionality module and planning tool.
 - (U) (\$224) Continue development of LOG functionality module. Initiate development of Naval Coastal Warfare (NCW) functionality module and planning tool.
 - (U) (\$388) Support VV&A Subject Matter Expert (SME) activities. Include review of all conceptual models and code development.
 - (U) (\$250) Continue implementation of run-time improvement technology as specified by DDB.
 - (U) (\$190) Implement GCCS-M Operational Databases including current tactical picture and targeting databases.
 - (U) (\$410) Continue implementation of GCCS-M Environmental Databases including Atmospheric, Terrain, Electromagnetic and Littoral.

R-1 Shopping List-Item No. 102-57 of 102-71

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Exhibit R-2a, Budget Item Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT)

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

- (U) (\$295) Support JTFEXs 02. Continue support to NPGS Fires Analysis project and FBES 02 planning, wargaming, and experimentation.
- (U) (\$230) Add/improve the interfaces between NSS and similar simulation systems from other services to improve interoperability with other services for an improved Joint Simulation capability to support Joint Assessments and Joint Command Level Training.
- (U) (\$205) Identify and import the standard/validated data and information needed to characterize the additional/improved warfare area representations directed by the NSS Configuration Control Board.
- (U) (\$300) Implement, test, and document improvements to the NSS GUI CAT COA Tool. Provide for Training and Maintenance.
- (U) (\$355) Support Integrated Product Teams (IPTs) addressing GCCS-M implementation issues and Integrated Development Teams (IDTs) addressing user based requirements. Implement Earned Value management system.
- (U) (\$800) Support NSS Configuration Control Board. Conduct factory testing of NSS builds v3.2 and v4.0 for deployment certification. Develop DDBs for NSS builds v4.2, v5.0 and v5.1. Conduct independent testing of all newly developed software code.

B. (U) OTHER PROGRAM SUMMARY: Not Applicable.

	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
OMN PE0204662N/1C1C	0	0	200							

C. (U) ACQUISITION STRATEGY: N/A

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Exhibit R-2a, Budget Item Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT)

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

D. (U) SCHEDULE PROFILE:

FY 2000			
Q1	Q2	Q3	Q4

FY 2001			
Q1	Q2	Q3	Q4

FY 2002			
Q1	Q2	Q3	Q4

Program Milestones

▲
ACAT III Designation Pending

Engineering Milestones

▲
Build 3.0
SW Delivery

▲
Build 3.1
SW Delivery

▲
Build 3.2
SW Delivery

▲
Build 3.3
SW Delivery

▲
Build 3.4
SW Delivery

▲
System Test (IIIA)

▲
System Test (IIIB)

T&E Milestones

▲
DT/OT IIIA

Contract Milestones

Multiple Contracts Awarded

(Two competitive contracts awarded for the following tasks: S/W Development, Analysis, Training, Installation, Independent Testing and VV&A SME (Verification, Validation and Accreditation Subject Matter Expert))

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Exhibit R-2a, Budget Item Justification

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EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	WR	VARIOUS	450	210	10/00	144	10/01					
Licenses			120									
Tooling												
GFE												
Award Fees												
Subtotal Product Development			570	210		144						
Remarks:												
Development Support Equipment												
Software Development	RX/WX	VARIOUS	3,100	3,328	10/00	3,327	10/01					
Training Development			255	200	10/00	150	10/01					
Integrated Logistics Support												
Configuration Management			415	300	10/00	250	10/01					
Technical Data												
GFE												
Subtotal Support			3,770	3,828		3,727						

Remarks:

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EXHIBIT R-3, RDT&E,N FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2306

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Naval Simulation System

Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	RX/WX	VARIOUS	828	400	10/00	427	10/01					
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			828	400		427						
Remarks:												
Contractor Engineering Support												
Government Engineering Support	WR	SSC SD	1270	670	10/00	650	10/01					
Program Management Support												
Program Management Personnel												
Travel	WR	SPAWAR SD	103	84	10/00	85	10/01					
Labor (Research Personnel)												
Overhead												
Subtotal Management			1,373	754		735						
Remarks:												
TOTAL COST			6,541	5,192		5,033						
Remarks:												

UNCLASSIFIED

UNCLASSIFIED

EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2307

PROJECT TITLE: Integrated Shipboard
Networking System

(U) COST (Dollars in thousands)

PROJECT

NUMBER	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	COST TO	TOTAL
TITLE	ACTUAL	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	PROGRAM	PROGRAM
X2307	Integrated Shipboard Network System (ISNS) (formerly Shipboard LAN/WAN)									
	0	4,466	3,958							

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Integrated Shipboard Network System (ISNS) program provides every Navy ship, including submarines, with a reliable, high-speed Local Area Network (LAN) that will provide LAN and Wide Area Network (WAN) access to the DISN WAN (Secure and Nonsecure Internet Protocol Router Network -SIPRNet and NIPRNet). It provides real-time information exchange between afloat units, Component Commanders, numbered Fleet Commanders and Fleet CINCs through the migration of existing legacy systems into the IT-21 strategy and is a key factor in the implementation of the Navy's portion of Joint Vision 2010. Under the Navy's information modernization strategy, full synchronization of shipboard networks, mission and information applications and Radio/Satellite communications and shore data dissemination infrastructure, installations are necessary to ensure end-to-end mission capability. The ISNS program maximizes the use of both COTS software and hardware resulting in dependence on commercially supported hardware and software. Engineering and technical support is provided so that existing systems will keep pace with hardware and software that is supported commercially.

The Integrated Shipboard Networking System (ISNS) project uses a combination of high speed switches, routers, servers and workstations, commercial networking, security and operating system software technologies to provide network access to classified and unclassified applications for use by ship's force, embarked units, embarked commanders and their staffs. The Integrated Shipboard Networking System is integrated with the Automated Digital Networking System (ADNS) and existing RF systems.

Under the Navy's information modernization strategy, full synchronization of shipboard networks, mission and information applications, Radio/Satellite communications and shore data dissemination infrastructure, installations are necessary to ensure end-to-end mission capability. The Integrated Shipboard Networking System program is closely synchronized on a ship by ship basis with the following dependent programs: Global Command and Control System Maritime (GCCS-M) and Navy Tactical Command Support System (NTCSS); and with these other related programs: Navy Standard Integrated Personnel System (NSIPS), Theatre Medical Information Program - Maritime (TMIP-M), Defense Messaging System (DMS), , Extremely High Frequency Satellite Communication (EHF SATCOM), Super High Frequency Satellite Communication (SHF SATCOM), Commercial SATCOM, Ultra High Frequency Satellite Communication (UHF SATCOM), Digital Wideband Transmission System (DWTS), ADNS, Digital Modular Radio (DMR), Global Broadcasting System (GBS), Video Information Exchange System (VIXS) and

R-1 Shopping List-Item No. 102-62 of 102-71

UNCLASSIFIED

Exhibit R-2a, Budget Item Justification

UNCLASSIFIED

EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Integrated Shipboard
Networking System

Information Security (INFOSEC) programs. The ISNS program provides infrastructure to support implementation/fielding of programs listed above. If the ISNS infrastructure is not in place, a large segment of the Fleet will not be able to utilize the available capabilities to improve productivity and increase efficiency. The ISNS program maximizes the use of Commercial off the shelf (COTS) software and hardware resulting in dependence on these items being commercially supported. The LAN modernization rate must keep pace with hardware and software that is supported commercially.

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UNCLASSIFIED

Exhibit R-2a, Budget Item Justification

UNCLASSIFIED

EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2307

PROJECT TITLE: Integrated Shipboard
Networking System

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- No funding. Funding deferred to commence in FY 2001.

2. (U) FY 2001 PLAN:

- (U) (\$1,791) Investigate, develop, and test Enterprise-Wide LAN Management and Administration and prepare a strategy to merge that with other existing Integrated Network Management development solutions. A seamless management and administration capability has great potential for reducing complexity of network operation for sailors.
- (U) (\$1,783) Investigate emerging networking technologies such as, Next Generation LAN Protocols, Wireless LAN, Secure/Nonsecure Voice Integration and Internet Protocol Video for potential incorporation into the Shipboard LAN architecture. Eighteen month technology change cycles drive equipment availability and the Shipboard LAN must prepare for efficient insertion of replacement technology.
- (U) (\$892) Investigate, develop and test NT software scripting to provide more easily maintainable and flexible NT network services.

3. (U) FY 2002 PLAN:

- (U) (\$1,008) Investigate, develop and test server and workstation technology upgrades to incorporate into existing architecture. The ISNS program must prepare for efficient insertion of replacement technology being driven by an eighteen month technology change cycle.
- (U) (\$1,600) Investigate, develop and test Enterprise-Wide Network Management and Administration to merge with existing Integrated Network Management development solutions.
- (U) (\$600) Research and develop more complex e-mail security and general security systems as they relate to the Shipboard LAN infrastructure.
- (U) (\$750) Investigate, develop and test NT software scripting.

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Exhibit R-2a, Budget Item Justification

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EXHIBIT R-2A, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT NUMBER: X2307

PROJECT TITLE: Integrated Shipboard
Networking System

B. (U) OTHER PROGRAM SUMMARY: (Dollars in thousands)

		FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
(U)	OPN	148,037	95,059	49,036							
(U)	O&MN	4,862	4,582	7,169							

C. (U) ACQUISITION STRATEGY: Not applicable. This is not an acquisition program with milestones.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Shopping List-Item No. 102-65 of 102-71

UNCLASSIFIED

Exhibit R-2a, Budget Item Justification

UNCLASSIFIED

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Integrated Shipboard
Networking System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Costs	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Software/Product Development												
1.1.1 Prime Mission Product	MIPR	FEDSIM/SAIC	0	650	12/00	650	12/01					
1.1.1 Prime Mission Product	WX	SSC CH	0	983	12/00	998	12/01					
1.1.1 Prime Mission Product	WX	SSC SD	0	400	12/00	350	12/01					
1.1.1 Prime Mission Product			0									
			0									
Subtotal Product Development			0	2,033		1,998						
Remarks:												
System Engineering			0									
1.1.1 System Engineering	MIPR	MITRE	0	204	10/00	210	10/01					
1.1.1 System Engineering	MIPR	FEDSIM/SAIC	0	685	12/00	600	12/01					
1.1.1 Systems Engineering	Various	Various	0	100	12/00	100	12/01					
			0									
Subtotal Support			0	989		910						
Remarks												

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Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604231N

PROJECT NUMBER: X2307

PROGRAM ELEMENT TITLE: Tactical Command System

PROJECT TITLE: Integrated Shipboard
Networking System

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WX	SSC Charl		305	12/00	250	12/01					
	WX	SSC SD	0	669	12/00	350	12/01					
	WX	SSC Ches	0	220	12/00	250	12/01					
	WR	OPTEVFOR	0	100	12/00	100	12/01					
Subtotal Operational T & E			0	1,294		950						
Remarks												
Project Management	WX	SSC Charl	0	150	12/00	100	12/01					
Subtotal Management			0	150		100						
Remarks												
Total Cost			0	4,466		3,958						

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Exhibit R-3, Project Cost Analysis

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FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROJECT NUMBER: X3032

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT TITLE: NTCSS Enterprise

& MLDN

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X3032 NTCSS Enterprise & MLDN	0	0	3,963							

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This RDT&E Project funding supports design, development and testing of two components of the Naval Tactical Command Support System (NTCSS) web initiative, NTCSS Enterprise Database and Maritime Logistics Data Network (MLDN). The development of a web-enabled enterprise database for NTCSS application will place all NTCSS databases into a similar structure, allowing greater interoperability between applications. MLDN will facilitate the movement of administrative workload from ships to shore.

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Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT NUMBER: X3032

PROJECT TITLE: NTCSS Enterprise
& MLDN

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS: Not Applicable

2. (U) FY 2001 PLAN: Not Applicable

3. (U) FY 2002 PLAN:

- (U) (\$3,963) Enterprise database design, development and testing. MLDN initiative starts with Business Process Improvement to identify which shipboard business can be put ashore.

B. (U) OTHER PROGRAM FUNDING SUMMARY (Dollars in thousands)

<u>Appn</u>	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	COST TO COMPLETE	TOTAL PROGRAM
OPN	57,686	54,387	42,826							
OMN (BA-1)	15,357	19,007	19,895							
OMN (BA-4)	17,396	18,729	20,375							
OMN,R	615	621	623							

C. (U) ACQUISITION STRATEGY: N/A

D. (U) SCHEDULE PROFILE: N/A

R-1 Shopping List-Item No. 102-69 of 102-71

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Exhibit R-2a, Project Justification

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT NUMBER: X3032

PROJECT TITLE: NTCSS Enterprise
& MLDN

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	0	0		600	10/01					
Systems Engineering	Various	Various	0	0		700	10/01					
Licenses	Various	Various	0	0		400	10/01					
Subtotal Product Development			0	0		1,700	10/01					
Remarks:												
Software Development	Various	Various	0	0		800	10/01					
Configuration Management	Various	Various	0	0		100	10/01					
Technical Data	Various	Various	0	0								
Subtotal Support			0	0		900	10/01					
Remarks:												

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Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT:

0604231N

PROGRAM ELEMENT TITLE:

Tactical Command System

PROJECT NUMBER: X3032

PROJECT TITLE: NTCSS Enterprise
& MLDN

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0	0		35	10/01					
Subtotal T&E			0	0		35	10/01					
Remarks												
Contractor Engineering Support	Various	Various	0	0		1,298	Various					
Government Engineering Support	Various	Various	0	0		30	Various					
Subtotal Management			0	0		1,328	Various					
Remarks												
Total Cost	Various	Various	0	0	N/A	3,963	Various					
Remarks												

R-1 Shopping List-Item No. 102-71 of 102-71

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604234N, E-2C RADAR MODERNIZATION PROGRAM					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost				96.000							96.000
E3051 - (E-2C Radar Modernization Program)			*	96.000							96.000
Quantity of RDT&E Articles	NOT APPLICABLE										0
<p>* FY2001 budget PE 0204152N (E2321), reflects a \$15.000 million Congressional Add for RMP, executed under E2978, which has been decreased by \$0.540 million for Congressional undistributed.</p> <p>** The FY2002 budget reflects a \$96.000 million Program Budget Decision (PBD 817) for the E-2C Radar Modernization Program.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The E-2C Radar Modernization Program (RMP) develops, demonstrates, and tests new radar technologies that modernize the primary sensor of the E-2C weapon system to provide a definitive littoral surveillance capability integral to the Navy's Theater Air Missile Defense (TAMD) Integrated Warfare Architecture. In addition, the RMP modernizes the E-2C avionics, provides improved battle space integration and improves the producibility of the entire weapons system. Key radar technologies are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, high dynamic range digital receivers and IFF/radar aperture integration. The resulting detection system will provide a substantially improved overland performance by correcting current sensor shortfalls and enhancing all current required mission areas while simultaneously contributing to the emerging TAMD mission requirements. The impact of the dominant battlefield awareness provided by this improved airborne early warning system will substantially contribute to the development of a single integrated air picture. These technologies were demonstrated in a ground environment in FY1999 and will continue to be refined through FY2003. This P.E. will be utilized for RMP pre-engineering and manufacturing development (Pre-E&MD) in FY2002 followed by a phased engineering and manufacturing development (E&MD) beginning in FY2003 with the development of a Littoral Surveillance capability in which will enter production in FY2006-2007 and completes with a full rate production decision for a cruise missile capable system compliant with the Joint Theater Air Missile Defense (JTAMD) mission needs statement in 2012.</p> <p>(U) JUSTIFICATION ACTIVITY: This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to a production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 103

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 6)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604234N, E-2C RADAR MODERNIZATION PROGRAM					E3051, E-2C RMP					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			*	**							96.000
RDT&E Articles Qty	0										0
* FY2001 budget PE 0204152N (E2321), reflects a \$15.000 million Congressional Add for RMP, executed under E2978, which has been decreased by \$0.540 million for Congressional undistributed. ** The FY2002 budget reflects a \$96.000 million Program Budget Decision (PBD 817) for the E-2C Radar Modernization Program.											
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The E-2C Radar Modernization Program (RMP) develops, demonstrates, and tests new radar technologies that modernize the primary sensor of the E-2C weapon system to provide a definitive littoral surveillance capability integral to the Navy's Theater Air Missile Defense (TAMD) Integrated Warfare Architecture. In addition, the RMP modernizes the E-2C avionics, provides improved battle space integration and improves the producibility of the entire weapons system. Key radar technologies are space-time adaptive processing (STAP), electronically scanning array (ESA), solid state transmitter, high dynamic range digital receivers and IFF/radar aperture integration. The resulting detection system will provide a substantially improved overland performance by correcting current sensor shortfalls and enhancing all current required mission areas while simultaneously contributing to the emerging TAMD mission requirements. The impact of the dominant battlefield awareness provided by this improved airborne early warning system will substantially contribute to the development of a single integrated air picture. These technologies were demonstrated in a ground environment in FY1999 and will continue to be refined through FY2003. This P.E. will be utilized for RMP pre-engineering and manufacturing development (Pre-E&MD) in FY2002 followed by a phased E&MD beginning in FY2003 with the development of a Littoral Surveillance capability in which will enter production in FY2006-2007 and completes with a full rate production decision for a cruise missile capable system compliant with the Joint Theater Air Missile Defense (JTAMD) mission needs statement in 2012.											
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:											
1. FY 2000 ACCOMPLISHMENTS: Not Applicable.											
2. FY 2001 PLANS: Not Applicable											
3. FY 2002 PLANS:											
-(U) (\$4.348) - Conduct System Requirement Review (SRR) for the C-130 TAMD Configuration											
-(U) (\$6.377) - Conduct System Preliminary Design Review (PDR) and Critical Design Review (CDR) for the C-130 TAMD Configuraion.											
-(U) (\$1.500) - Procure Ong Lead Material for C-130 TAMD Configuraion.											
-(U) (\$8.775) - Design and Fabricate HE2000 Weapon System Pallet for C-130 TAMD Configuration.											
-(U) (\$75.000) - E-2C RMP efforts to include system/architecture trade studies, requirements analysis, radar system demonstration/validation, producibility enhancement and liffe cycle costs reduction efforts. Radar/IFF integration, and demonstration/validation of other mission avionics systems.											

R-1 SHOPPING LIST - Item No. 103

Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 2 of 6)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604234N, E-2C RADAR MODERNIZATION PROGRAM	E3051, E-2C RMP

	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget:	0.000	0.000	0.000
(U) Adjustments from the President's Budget:	0.000	0.000	96.000
(U) FY 2002 President's Budget Submit:	0.000	0.000	96.000

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2002 increase of \$96.00 million consists of a Program Budget Decision (PBD 817) for E-2C Radar Modernization Program.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

R-1 SHOPPING LIST - Item No. 103

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001																																																																																	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604234N, E-2C RADAR MODERNIZATION PR				PROJECT NUMBER AND NAME E3051, E-2C RMP																																																																																			
<p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th>FY2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>To Complete</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>APN 1/E-2C (LI #10 &11)</td> <td>381.264</td> <td>314.709</td> <td>278.937</td> <td>229.301</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>2742.515</td> </tr> <tr> <td>APN 5/E-2C (LI #35)</td> <td>71.485</td> <td>42.095</td> <td>14.636</td> <td>10.750</td> <td>35.905</td> <td>10.320</td> <td>9.553</td> <td>9.466</td> <td>1348.4</td> <td>2331.9</td> </tr> <tr> <td>APN 6/E-2C (LI #48)</td> <td>11.218</td> <td>16.98</td> <td>21.711</td> <td>11.459</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>92.666</td> </tr> </tbody> </table> <p><u>Related RDT&E</u> (U) 0603658N (Ship Self Defense, CEC) (U) 0204152N (E2 Squadrons)</p> <p>(U) D. ACQUISITION STRATEGY: Not Applicable</p> <p>(U) E. SCHEDULE PROFILE:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td>Q1/02 Conduct SRR for C-130 TAMC Config.</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>Q3/02 Conduct PDR for C-130 TAMC Config.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td>Q4/02 Continue E-2C RMP dem/val effort</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>Q1/02 award BOA, MSI, C-130 Vehicle, System contracts</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										<u>Line Item No. & Name</u>	FY2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	APN 1/E-2C (LI #10 &11)	381.264	314.709	278.937	229.301	0	0	0	0	0	2742.515	APN 5/E-2C (LI #35)	71.485	42.095	14.636	10.750	35.905	10.320	9.553	9.466	1348.4	2331.9	APN 6/E-2C (LI #48)	11.218	16.98	21.711	11.459	0	0	0	0	0	92.666		<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>TO COMPLETE</u>	(U) Program Milestones		Q1/02 Conduct SRR for C-130 TAMC Config.						Q3/02 Conduct PDR for C-130 TAMC Config.				(U) Engineering Milestones		Q4/02 Continue E-2C RMP dem/val effort				(U) T&E Milestones						(U) Contract Milestones		Q1/02 award BOA, MSI, C-130 Vehicle, System contracts			
<u>Line Item No. & Name</u>	FY2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																																																																															
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UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604234N, E-2C RADAR MODERNIZATION PROGRAM			E3051, E-2C RMP						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Dev.	SS/CPFF	Classified				7.459	10/01				7.459	7.459
Hardware/Software Dev.	SS/CPFF	NGC, NY				10.391	10/01				10.391	10.391
E-2C RMP Dem/Val Continuation efft	SS/CPFF	NGC, NY				49.000	11/01				49.000	49.000
E-2C RMP Eng. Spt Services	C/CPFF	NAWCAD, PAX RIVER, MD				2.800	11/01				2.800	2.800
E-2C RMP Require. Analysis Spt	C/FP	TBD				0.800	01/02				0.800	0.800
Hardware/Software Dev.	SS/CPFF	Classified				18.000	10/01				18.000	18.000
Subtotal Product Development						88.450					88.450	88.450
Remarks: New Project begins in FY2002.												
Government Eng. Spt	WR/WX	NAWCAD, PAX RIVER, MD				1.629	10/01				1.629	
Government Eng. Spt	WX/RC	NAWCAD, PAX RIVER, MD				2.904	10/01				2.904	
Government Eng. Spt	WR	NSWCDD, Dahlgren, VA				0.150	10/01				0.150	
Government Eng. Spt	WR	NRL, Washington, D.C.				0.100	10/01				0.100	
Subtotal Support						4.783					4.783	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604234N, E-2C RADAR MODERNIZATION PROGRAM			PROJECT NUMBER AND NAME E3051, E-2C RMP						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR/WX	NAWCAD, PAX RIVER, MD				2.598	10/01				2.598	
Subtotal T&E						2.598					2.598	
Remarks:												
Management	WX/RX	NAWCAD, PAX RIVER, MD				0.154	10/01				0.154	
Travel	WR/WX	NAWCAD, PAX RIVER, MD				0.015	10/01				0.015	
Subtotal Management						0.169					0.169	
Remarks:												
Total Cost						96.000					96.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 103

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY; BA 5					R-1 ITEM NOMENCLATURE: Navy Area Theater Ballistic Missile Defense, 0604235N (Formerly 0604867C, FY2001 and prior yrs)					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
K3052 - Navy Area	0.000	0.000	388.496						TBD	TBD

Navy Area Theater Ballistic Missile Defense transfers from the BMDO program to the Navy in FY 2002 (formerly 0604867C in FY 2000 and FY 2001 and prior years).

A. Mission Description and Budget Item Justification
The Navy Missile Defense program builds on the national investment in AEGIS ships, AEGIS Weapon Systems (AWS), and Navy Standard Missile II (SM-2) Block IV missiles. Two classes of ships continue to be deployed with the AEGIS combat system: the CG-47 TICONDEROGA-class cruisers and the DDG-51 ARLEIGH BURKE-class destroyers. Navy Missile Defense will take advantage of the attributes of naval forces including overseas presence, mobility, flexibility, and sustainability in order to provide lower tier protection to debarkation ports, coastal airfields, amphibious objective areas, Allied forces ashore, and other high value sites. Navy assets will provide an option for initial Theater Ballistic Missile Defense (TBMD) allowing the insertion of additional land-based TBMD assets and other expeditionary forces in an opposed environment. Navy Missile Defense is designed to be fully interoperable within the Theater Missile Defense (TMD) Family of Systems (FoS) architecture.

B. Program Change Summary

Previous President's Budget (FY 2001 PB)	FY 2002 228.596
Congressional Adjustments	
Appropriated Value	
Adjustments to Appropriated Value	
a. Congressional Reductions (FFRDC, Inflation, etc)	
b. OSD Reductions	
c. Emergency Supplemental	
d. Internal Reprogramming	
Adjustments to Budget Years Since FY 2001 PB	159.900
Current Budget Submit (FY 2002 PB)	388.496

Change Summary Explanation:
Funding: Cost growth and fact of life schedule adjustments resulted in the Department increase of funding in FY 2002.

Schedule: Due to the complexity of SM-2 Block IVA hardware/software integration, the program has experienced schedule delay in completing White Sands Missile Range (WSMR) flight testing. This has lead to restructuring the program as part of the Department's Strategy Review.

Technical: Radio Frequency Adjunct Sensor (RFAS) Software integration and guidance section hardware/software integration challenges have resulted in a delay to the next flight test event (Fly-by Engineering Test) and subsequently delays completion of flight testing at White Sands Missile Range and other schedule milestone dates.

R-1 SHOPPING LIST - Item No.

Exhibit R-2, RDT&E Budget Item Justification

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N; BA 5	PROGRAM ELEMENT NAME AND NUMBER Navy Area Theater Ballistic Missile Defense, 0604235N (Formerly 0604867C, FY2001 and prior yrs)				PROJECT NAME AND NUMBER K3052 - Navy Area					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	0.000	388.496						TBD	TBD
RDT&E Articles Qty										

Navy Area Theater Ballistic Missile Defense transfers from the BMDO program to the Navy in FY 2002 (formerly 0604867C in FY 2000 and FY 2001 and prior years).

A. Mission Description and Budget Item Justification

The Navy Missile Defense program builds on the national investment in AEGIS ships, AEGIS Weapon Systems (AWS), and Navy Standard Missile II (SM-2) Block IV missiles. Two classes of ships continue to be deployed with the AEGIS combat system: the CG-47 TICONDEROGA-class cruisers and the DDG-51 ARLEIGH BURKE-class destroyers. Navy Missile Defense will take advantage of the attributes of naval forces including overseas presence, mobility, flexibility, and sustainability in order to provide lower tier protection to debarkation ports, coastal airfields, amphibious objective areas, Allied forces ashore, and other high value sites. Navy assets will provide an option for initial Theater Ballistic Missile Defense (TBMD) allowing the insertion of additional land-based TBMD assets and other expeditionary forces in an opposed environment. Navy Missile Defense is designed to be fully interoperable within the Theater Missile Defense (TMD) Family of Systems (FoS) architecture.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

FY 2002 Planned Program:

- (U) \$287.153 Continue Engineering, Manufacturing, and Development (EMD) of the SM-2 Block IVA missile. Continue White Sands Missile Range (WSMR) SM-2 Block IVA missile flight testing. Deliver AEGIS Weapon System (AWS) tactical computer program to Developmental Testing/Operational Testing (DT/OT) ship. Begin Developmental Testing (DT) at sea with AEGIS Baseline 6 Phase III computer program. Complete follow-on AEGIS Weapon System Baseline 7 Phase I computer program development and testing and conduct demonstration at Combat Systems Engineering Development Sites (CSEDS). Continue implementation of modifications, as required, to Navy Command and Control systems to maintain consistency with the Joint Planning Network, Joint Data Network, and Joint Composite Tracking Network.
- (U) \$2.370 Continue required lethality analyses and lethality model refinements.
- (U) \$98.973 Continue building and delivery of targets to support Navy Area Theater Ballistic Missile Defense (TBMD) flight tests.

R-1 SHOPPING LIST - Item No.

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																							
APPROPRIATION/BUDGET ACTIVITY RDTE, N; BA 5	PROGRAM ELEMENT NAME AND NUMBER Navy Area Theater Ballistic Missile Defense, 0604235N (Formerly 0604867C, FY2001 and prior yrs)	PROJECT NAME AND NUMBER K3052 - Navy Area																								
<p>Navy Area Theater Ballistic Missile Defense transfers from the BMDO program to the Navy in FY 2002 (formerly 0604867C in FY 2000 and FY 2001 and prior years).</p> <p>B. (U) Other Program Funding Summary:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td style="text-align: center;"><u>FY 2002</u></td> </tr> <tr> <td>WPN BLI 140000</td> <td style="text-align: center;">\$7.0M</td> </tr> </table> <p>C. Acquisition Strategy:</p> <p>Navy AREA Missile Defense. The Navy Area program builds on the existing Aegis air defense system to achieve a sea-based lower-tier Ballistic Missile Defense capability. The program includes a phased development with early demonstration of AEGIS Theater Ballistic Missile detection capability. This strategy consists of a Navy Area TBMD Program evolving to a Theater-Wide Defense TB program. The Navy Area Program strategy will build on existing force structure by modifying the SM-2 Block IV missile and AEGIS Combat System to achieve TBMD capability.</p> <p>D. Schedule Profile</p> <table style="width: 100%; border: none;"> <thead> <tr> <th></th> <th style="text-align: center;">FY 2000</th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002 2Q</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> <th style="text-align: center;">FY 2006</th> <th style="text-align: center;">FY 2007</th> </tr> </thead> <tbody> <tr> <td>Tactical Developmental Testing At Sea – Start</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						<u>FY 2002</u>	WPN BLI 140000	\$7.0M		FY 2000	FY 2001	FY 2002 2Q	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Tactical Developmental Testing At Sea – Start								
	<u>FY 2002</u>																									
WPN BLI 140000	\$7.0M																									
	FY 2000	FY 2001	FY 2002 2Q	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007																		
Tactical Developmental Testing At Sea – Start																										

R-1 SHOPPING LIST - Item No.

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER K3052 - Navy Area						
RDT&E, N; BA 5			Navy Area Theater Ballistic Missile Defense, 0604235N (Formerly 0604867C, FY2001 and prior yrs)									
Product Development	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SM-2 Blk IVA Missile	CPAF	RAYTHEON				119.051				TBD	TBD	
SM-2 Blk IVA Missile	WR	CHINA LAKE				0.550				TBD	TBD	
AWS/BMC4I	CPAF	LOCKHEED MARTIN				52.317				TBD	TBD	
AWS/BMC4I/SM-2	WR	NSWC/DD				16.127				TBD	TBD	
AWS/BMC4I/SM-2	CPFF	JHU/APL				19.441				TBD	TBD	
AEGIS Weapon System	MIPR	MIT/LL				1.592				TBD	TBD	
AWS/BMC4I	CPFF	TSC				0.100				TBD	TBD	
AWS/SM-2	WR	NWAS				3.283				TBD	TBD	
Vertical Launch System	CPAF	UNITED DEFENSE				0.532				TBD	TBD	
BMC4I	RCP	SPAWAR				0.000				TBD	TBD	
Systems Architecture/T&E/BMC4I	CPFF	ANTEON				6.359				TBD	TBD	
SM-2/AWS/VLS	VARIOUS	VARIOUS				14.638				TBD	TBD	
Subtotal Product Development						233.990				TBD	TBD	
Remarks:												
Support Cost	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Architecture	CPFF	JHU/APL	2.927	1.670		1.963				TBD	TBD	
SM-2/AWS/Sys Arch	WR	NSWC/DD	14.379	4.937		7.397				TBD	TBD	
VLS/Sys Arch/BMC4I	VARIOUS	VARIOUS	3.497	1.528		2.261				TBD	TBD	
AWS	CPFF	TSC	3.582	1.350		1.500				TBD	TBD	
AWS	WR	NWAS/CORONA	2.830	1.000		1.430				TBD	TBD	
AWS	MIPR	MIT/LL	5.200	1.300		1.800				TBD	TBD	
Subtotal Support			32.415	11.785		16.351				TBD	TBD	
Remarks:												

R-1 SHOPPING LIST - Item No.

Exhibit R-3, Project Cost Analysis

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N; BA 5			Navy Area Theater Ballistic Missile Defense, 0604235N			K3052 - Navy Area (Formerly 0604867C, FY2001 and prior yrs)						
Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test & Evaluation	CPFF	JHU/APL				2.633				TBD	TBD	
Test & Evaluation	WR	WSMR				3.907				TBD	TBD	
Test & Evaluation	WR	PMRF				5.988				TBD	TBD	
T&E/IMPACT/Lethality	WR	NSWC/DD				4.530				TBD	TBD	
VLS/T&E	WR	NSWC/PHD				1.166				TBD	TBD	
Test & Evaluation	MIPRE	MIT/LL				0.265				TBD	TBD	
Test & Evaluation	WR	COTF				2.335				TBD	TBD	
Targets	N/A	SMDC Army				98.973				TBD	TBD	
T&E/VLS/BMC4I	Various	Various				5.852				TBD	TBD	
Subtotal Test and Evaluation:						125.649				TBD	TBD	
Remarks:												
Management Services	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
SM-2 Blk IVA Missile		BAE Systems				4.111				TBD	TBD	
AEGIS Weapon System		PCI				1.315				TBD	TBD	
Systems Architecture		NAVSEA				2.200				TBD	TBD	
T&E/Sys Architecture		Anteon				1.840				TBD	TBD	
SM/BMC4I/SysArch/VLS		Various				3.040				TBD	TBD	
Subtotal Mgmt Services:						12.506				TBD	TBD	
Remarks:												
Total Cost						388.496		0.000		TBD	TBD	
Remarks: Navy Area Theater Ballistic Missile Defense transfers from the BMDO program to the Navy in FY 2002 as a preliminary result of the Strategy Review.												

R-1 SHOPPING LIST - Item No.

Exhibit R-3, Project Cost Analysis

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:				
							June 2001				
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						0604245N USMC H-1 Upgrades					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	277.055	178.524	138.189	170.068							
H2279 USMC H-1 Upgrades	277.055	178.524*	138.189	170.068							
Quantity of RDT&E Articles	5										
Quantity of (5) RDT&E Engineering and Manufacturing Development (EMD) test articles were placed on contract prior to FY98 and remanufacture commenced in FY99. One aircraft will be used for live fire test and evaluation.											
*The FY 2000 budget reflects a \$26.6M Congressional add for USMC H-1 Upgrades (Project H2419) which has been revised by \$0.839M for Congressional undistributed reductions.											
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission of the AH-1W attack helicopter is to provide rotary wing close air support, anti-armor, armed escort, armed/visual reconnaissance and fire support coordination capabilities under day/night and adverse weather conditions. The mission of the UH-1N utility helicopter is to provide command and control and combat assault support under day/night and adverse weather conditions and special operations support; supporting arms coordination and aeromedical evacuation. Major modifications for both aircraft that remanufacture AH-1W/UH-1N's into AH-1Z/UH-1Y's include: a new 4-bladed, composite rotor system with semi-automatic blade fold, new performance matched transmissions, T700 Engine Digital Electronic Control Units (DECUs), new 4-bladed tail rotors and drive systems, more effective stabilizers, upgraded landing gear, tail pylon structural modifications, and common, fully integrated cockpits and avionics systems. This remanufacture will add 10,000 flight hours to AH-1Z/UH-1Y airframes. The fully integrated cockpits will reduce operator workload and improve situational awareness, thus increasing safety and reducing the rate of aircraft attrition. They will provide considerable growth potential for future weapon systems and avionics, which will significantly increase mission effectiveness and survivability. The cockpits will also include integration of on-board mission planning, communications, digital fire control, self-navigation, night targeting, and weapon systems management in nearly identical crew stations reducing training requirements. This remanufacture maximizes commonality between the two aircraft and provides needed improvements in crew and passenger survivability, payload, power available, endurance, range, airspeed, maneuverability and supportability.											
(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to a production approval decision.											

R-1 SHOPPING LIST - Item No. 105

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades				PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	277.055	178.524*	138.189	170.068							
RDT&E Articles Qty	5										

Quantity of (5) RDT&E Engineering and Manufacturing Development (EMD) test articles were placed on contract prior to FY98 and remanufacture commenced in FY99. One aircraft will be used for live fire test and evaluation.

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(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$137.941) Continued transmission bench test, completed Structural Test Article testing, continued tooling validation, continued flight test planning, completed assembly of first AH-1Z & UH-1Y aircraft, conducted test readiness reviews, and commenced aircraft instrumentation system level functional testing and aircraft ground testing.
- (U) (\$ 24.983) Continued development of integrated avionics and performed bench functional checks. Continued mission computer software coding.
- (U) (\$ 14.800) Continued integrated logistics support tasks including level of repair analysis, failure modes effects and criticality analysis, logistics support analysis, reliability centered maintenance analysis, and documentation.
- (U) (\$.800) Continued component fatigue testing and live fire test and evaluation.

R-1 SHOPPING LIST - Item No. 105

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDTE&E, N / BA-5	0604245N USMC H-1 Upgrades	H2279 USMC H-1 Upgrades
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>2. FY 2001 PLAN:</p> <ul style="list-style-type: none">- (U) (\$ 51.227) Conduct pre-flight ground test and first flight of AH-1Z; continue mission computer software coding.- (U) (\$ 14.893) Complete transmission bench testing and aircraft drive train validation.- (U) (\$ 44.436) Complete tooling validation and assembly of remaining EMD aircraft including structural testing.- (U) (\$ 22.706) Continue integrated logistics support (ILS) tasks including level of repair analysis, failure modes effects and criticality analysis, logistics support analysis, reliability centered maintenance analysis, integrated mechanical diagnostics, and documentation.- (U) (\$.700) Continue live fire testing and evaluation.- (U) (\$ 4.227) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68. <p>3. FY 2002 PLAN:</p> <ul style="list-style-type: none">- (U) (\$ 92.717) Conduct pre-flight ground test and first flight of UH-1Y, conduct high-altitude performance tests, non-firing loads and vibes, handling qualities, structural demonstration, gearbox tear-down/inspection, and conduct development of Aircrew Procedures Trainer (APT).- (U) (\$ 18.434) Conduct external stores jettison test, firing loads and vibes, weapons system accuracy, Infrared evaluation, Electromagnetic Environmental Effects, and Electronic Warfare evaluation.- (U) (\$ 48.353) Conduct Integrated Avionics System (IAS) and weapons system evaluation.- (U) (\$ 7.555) Continue program development testing and live fire test and evaluation.- (U) (\$ 3.009) Continue ILS tasks including level of repair analysis, logistics support analysis, reliability centered maintenance analysis, integrated mechanical diagnostics.		

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Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 3 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades		PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades	

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	183.266	139.680	48.960
(U) Adjustments from the President's Budget:	-4.742	-1.491	121.108
(U) FY 2002 President's Budget Submit:	178.524	138.189	170.068

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 net decrease of \$4.742 million reflects a decrease of \$4.169 million for a Small Business Innovative Research (SBIR) assesment, a decrease of \$3.049 million for a reprioritizationof requirements within the Navy, a decrease of \$0.718 million for a Congressional Recission, and an increase of \$3.194 million for a below threshold reprogrammingfor heavy weather tie downs. The FY 2001 net decrease of \$1.491 million reflects a decrease of \$0.978 million for a Congressional Reduction, a decrease of \$0.209 million for reprioritizationof requirements within the Navy, and a decrease of \$0.304 million for a congressional recission. The FY 2002 net increase of \$121.108 million reflects an increase of \$105.500 million as part of a program restructure effort (PBD-113), \$15.0 million for acquisition stability residual funding for USMC H-1 EMD contract completion, a decrease of \$0.058 million for reprioritizationof requirements within the Navy, an increase of \$0.697 million for flight test support and NAWCAD Pax River host tennant agreement, and a decrease of \$0.031 million for economic assumptions.

(U) Schedule: Change reflects commencement of flight test program following successful 1st flight of AH-1Z in 1st Qtr 01.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
P-1 LI #8, UH-1Y/AH-1Z (4BN/4BW)	0	0	0							
Quantity	0	0	0							

FY01, FY02 Integrated Mechanical Diagnostics (IMD) development is redirected to P.E. 0604245N

Related RDT&E:

(U) P.E. 0604212N, ASW & Other Helo Development

(U) P.E. 0603266N, AH-1T Composite Rotor Blade

R-1 SHOPPING LIST - Item No. 105

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 4 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																										
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604245N USMC H-1 Upgrades	PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades																										
<p>(U) D. ACQUISITION STRATEGY: The H-1 Upgrades is an ACAT ID program which encompasses Engineering and Manufacturing Development of new end-items prior to a production approval decision. The prime contract is sole source to Bell Helicopter Textron, Inc. and is a remanufacture of AH-1W and UH-1N aircraft.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>TO COMPLETE</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td>1Q/01 1st Flight AH-1Z 2Q/01-4Q/01 UH/AH Test</td> <td>1Q/02-4Q/02 UH/AH Test 1Q/02 1st Flight UH-1Y</td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>	(U) Program Milestones					(U) Engineering Milestones					(U) T&E Milestones		1Q/01 1st Flight AH-1Z 2Q/01-4Q/01 UH/AH Test	1Q/02-4Q/02 UH/AH Test 1Q/02 1st Flight UH-1Y		(U) Contract Milestones				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>																								
(U) Program Milestones																												
(U) Engineering Milestones																												
(U) T&E Milestones		1Q/01 1st Flight AH-1Z 2Q/01-4Q/01 UH/AH Test	1Q/02-4Q/02 UH/AH Test 1Q/02 1st Flight UH-1Y																									
(U) Contract Milestones																												

R-1 SHOPPING LIST - Item No. 105

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604245N USMC H-1 Upgrades				PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Major Contract	SS CPFF	Bell Helicopter, Ft. Worth, TX	7.851							Continuing	Continuing	Continuing
Award Fees*		Bell Helicopter, Ft. Worth, TX	12.668							Continuing	Continuing	Continuing
Major Contract	SS CPIF*	Bell Helicopter, Ft. Worth, TX	374.140	118.765	10/00	126.000	10/01			Continuing	Continuing	Continuing
Training	SS CPIF	TBD	0.000	0.000		19.200	01/02			Continuing	Continuing	Continuing
GFE	Various	Various	11.318	1.699	Various					Continuing	Continuing	Continuing
In-House Support (Field Activities)	WR	Various	35.535	11.430	Various	12.018	Various			Continuing	Continuing	Continuing
In-House Support (Travel)	WR	Various	0.987	0.250	10/00	0.350	10/01			Continuing	Continuing	Continuing
Trainers	WR	Various	4.564	0.118	12/00	2.125	11/01			Continuing	Continuing	Continuing
Subtotal Product Development			447.063	132.262		159.693				Continuing	Continuing	Continuing
<p>*Remarks: Effective 1 May 00, cost plus incentive fee (CPIF) applies. Original contract was was a SS CPAF contract. Total award fee pool \$47,496,152, and to date \$12,668,250 has been awarded. Period #1 was 90%, period #2 87%, period #3 90%, period #4 77%, period #5 76%, and period #6 was 0%. Award fee activity was terminated on 30 April 2000.</p> <p>Major contract (\$712.632M) plus award fees (\$12.668M) equals total value of contract (\$725.300M).</p>												
Technical Engineering Services	C FFP	CCI, Inc.	1.855	0.624	11/00	0.745	11/01			Continuing	Continuing	Continuing
										Continuing		
										Continuing		
										Continuing		
										Continuing		
										Continuing		
										Continuing		
Subtotal Support			1.855	0.624		0.745				Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 105

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 7)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604245N USMC H-1 Upgrades			PROJECT NUMBER AND NAME H2279 USMC H-1 Upgrades						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various	3.190	0.660	11/00	8.645	11/01			Continuing	Continuing	
Subtotal T&E			3.190	0.660		8.645				Continuing	Continuing	
Remarks:												
Program Office & Logistics Support	C FFP	CCI, Inc.	3.471	0.416	11/00	0.985	11/01			Continuing	Continuing	6.606
SBIR Assessment				4.227						Continuing	Continuing	
Subtotal Management			3.471	4.643		0.985				Continuing	Continuing	
Remarks:												
Total Cost			455.579	138.189		170.068				#VALUE!	#VALUE!	
Remarks:												

R-1 SHOPPING LIST - Item No. 105

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05						0604261N Acoustic Search Sensors					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost		24.782	20.545	16.825						Continuing	Continuing
H0480 ASW SENSORS & PROCESSING		24.782	20.545	16.825						Continuing	Continuing
Quantity of RDT&E Articles		202	1								203
<p>(U) (H0480) – This project provides improved air Anti-Submarine Warfare (ASW) mission effectiveness through engineering development of hardware and software associated with acoustic systems, sensors, processing, post-processing, data recording and displays for air ASW platforms. Key objectives: improved detection, classification, localization and tracking; and increased capacity and flexibility to handle multi-sensor data. Programs being funded during the period identified are the Generic Acoustic Stimulation System (GASS) which is an ocean, sensor and target-modeling system that will add shallow water and range dependent capabilities to AIR ASW trainers, the Advanced Extended Echo Ranging (AEER) system to provide bistatic acoustic source and signal processing for harsh water environments in the P-3C and the Hydrostatic Sensor Firing Device (HSFD) program to provide ASW depth bomb capability. In FY2000 procure design qualification units for non-coherent source technology acceleration and two GASS Engineering Development Model (EDMs). Procure an additional GASS EDM in FY2001. Future programs planned for this project include the Non-Traditional Acoustic Processing (NTAP) program to provide exploitation of forward scatter and transient signals for added submarine detection opportunities, the Tactical Acoustic Measurement and Decision Aid (TAMDA) program to provide in situ environmental data and tactical planning for improved mission performance, and the Shallow Water ASW Localization and Attack System (SWALAS) to provide improved localization and attack in regional conflict environments.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 106

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 8)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:				
								June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-05		0604261N Acoustic Search Sensors				H0480 ASW Sensors & Processing						
COST (\$ in Millions)		Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			24.782	20.545	16.825						Continuing	Continuing
RDT&E Articles Qty AEER			200									200
RDT&E Articles Qty GASS			2	1								3
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides improved air Anti-Submarine Warfare (ASW) mission effectiveness through engineering development of hardware and software associated with acoustic systems, sensors, processing, post-processing, data recording and displays for air ASW platforms. Key objectives: improved detection, classification, localization and tracking; and increased capacity and flexibility to handle multi-sensor data. Programs being funded during the period identified are the Generic Acoustic Stimulation System (GASS) which is an ocean, sensor and target modeling system that will add shallow water and range dependent capabilities to AIR ASW trainers, the Advanced Extended Echo Ranging (AEER) system to provide an improved bistatic acoustic source and signal processing for harsh water environments in the P-3C and the Hydrostatic Sensor Firing Device (HSFD) program to provide ASW depth bomb capability. In FY 2000 procure design qualification units for non-coherent source technology acceleration and two GASS Engineering Development Model (EDMs) . Procure an additional GASS EDM in FY2001. Future programs planned for this project include the Non-Traditional Acoustic Processing (NTAP) program to provide exploitation of forward scatter and transient signals for added submarine detection opportunities, the Tactical Acoustic Measurement and Decision Aid (TAMDA) program to provide in-situ environmental data and tactical planning for improved mission performance, and the Shallow Water ASW Localization and Attack System (SWALAS) to provide improved localization and attack in regional conflict environments.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <p>(U) GASS</p> <p>- (U) (\$15.376) EMD contractor completed GASS system Critical Design Review (CDR) and initiated code and test for the major Complete Software Configuration Items (CSCIs), completed Preliminary Design Review (PDR) for GASS Interface Module (GIM) #1 & #2, CDR for GIM #1 and initiated GIM code and test, initiated/completed procurement of pre-production hardware, and initiated/completed fabrication of GASS units #1 and #2.</p> <p>-(U) (\$.335) Continued GFE environmental software improvements.</p> <p>-(U) (\$.710) Provided engineering support to EMD contract.</p> <p>-(U) (\$ 1.153) Provided other engineering support and contractor support services.</p>												

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 8)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-05	0604261N Acoustic Search Sensors	H0480 ASW Sensors & Processing
<p>(U) AEER</p> <p>-(U) (\$2.601) Completed software code and functional test for AEER baseline in the P-3C.</p> <p>-(U) (\$4.250) Completed CDRs and fabrication and test of Engineering Change Proposal (ECP) qualification units for non-coherent source technology enhancements, initiated software code and test.</p> <p>-(U) (\$.357) Provided other engineering support and contract support services.</p> <p>2. FY 2001 PLAN:</p> <p>(U) GASS</p> <p>-(U) (\$ 8.300) EMD contractor complete code and test for the major CSCIs, initiate/complete PDR for GIM #3 and 4, CDR for GIM #2 and 3, complete GIM #1 in house test and initiate field installation and test, initiate/complete fabrication of GASS units #3 and 4.</p> <p>-(U) (\$.382) Continue GFE environmental software improvements.</p> <p>-(U) (\$.710) Provide engineering support to EMD contract.</p> <p>-(U) (\$ 1.377) Provide other engineering support and contractor support services.</p> <p>-(U) (\$.227) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.</p> <p>(U) AEER</p> <p>-(U) (\$ 1.500) Complete software and integration test, complete DT/OT for the non-coherent source enhancement.</p> <p>-(U) (\$ 3.115) Complete AEER source system design trade offs, systems analysis, initiate/complete Analysis of Alternative (AOA) and Milestone II.</p> <p>-(U) (\$ 3.000) Initiate AEER source acoustic processing software in the P-3C.</p> <p>-(U) (\$.871) Provide other engineering support and contractor support services.</p> <p>-(U) (\$.836) Initiate Hydrostatic Device system design and trade offs.</p> <p>-(U) (\$.227) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.</p>		

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-05	PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors	PROJECT NUMBER AND NAME H0480 ASW Sensors & Processing
<p>3. FY 2002 PLAN:</p> <p>(U) GASS</p> <p>-(U) (\$ 6.200) EMD contractor complete and deliver (ready for training) GIM #1 and GIM #2, perform Test Readiness Review (TRR) for on-site testing. CDR for GIM#3. Conduct test/integration for GIMs #2 & #3. CDR for GIM #4. Initiate/complete MS III.</p> <p>-(U) (\$.343) Continue GFE environmental software improvements.</p> <p>-(U) (\$.729) Provide engineering support to EMD contract.</p> <p>-(U) (\$ 1.066) Provide other engineering support and contractor support services.</p> <p>(U) AEER</p> <p>-(U) (\$ 1.395) Continue Hydrostatic Device system design and trade offs.</p> <p>-(U) (\$ 5.481) Initiate EMD and software, integration, and test for the AEER source, continue AEER source acoustic processing software in the P-3C.</p> <p>-(U) (\$ 1.611) Provide other engineering support and contractor support services.</p>		

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EXHIBIT R-2a, RDT&E Project Justification				DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05		PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors		PROJECT NUMBER AND NAME H0480 ASW Sensors & Processing	
(U) B. PROGRAM CHANGE SUMMARY:					
	FY 2000	FY2001	FY2002		
(U) FY 2001 President's Budget:	25.810	20.766	24.973		
(U) Adjustments from the President's Budget:	-1.028	-0.221	-8.151		
(U) FY 2002 President's Budget Submit:	24.782	20.545	16.822		
CHANGE SUMMARY EXPLANATION:					
(U) Funding: The FY 2000 net decrease of \$1.028 million reflects a decrease of \$.441 million Small Business Innovative Research assessment, a decrease of \$.486 million for a reprioritization of requirements within the Navy, a decrease of \$.101 million for a Congressional Recission. The FY 2001 decrease of \$.221 million reflects a decrease of \$.031 million for a reprioritization of requirements within the Navy, a decrease of \$.145 million for a Congressional Reduction, and a decrease of \$.045 million for a Congressional Recission. The FY 2002 decrease of \$8.151 million reflects a decrease of \$8.071 million for a reprioritization of requirements within the Navy, and a decrease of \$.080 million for economic assumptions.					
(U) Schedule: GASS PDR#1 delayed from 1Q/00 to 2Q/00 due to the GASS CDR being held late in December. GASS GIM CDR#1 moved to 4Q/00 to combine with GASS GIM #2 PDR due to the two systems commonality. AEER PDR, CDR,TECH EVAL and OPEVAL changed to correctly realign the milestones. Added new milestones in FY04 to provide additional program definition.					
(U) Technical: Not applicable.					
(U) C. OTHER PROGRAM FUNDING SUMMARY:					
<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	To Complete	Total Cost
(U) APN/P-3 Mod/(053800)	0	0	0	Continuing	Continuing
(U) APN/SH-60R/(018200)	0	0	3.5	Continuing	Continuing
<u>(U) Related RDT&E</u>					
(U) P.E. 0603254N (ASW Systems Development)					

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																				
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-05	PROGRAM ELEMENT NUMBER AND NAME 0604261N Acoustic Search Sensors	PROJECT NUMBER AND NAME H0480 ASW Sensors & Processing																				
<p>(U) D. ACQUISITION STRATEGY: The GASS EMD contract was competitively awarded. Program development is based on a COTS open architecture hardware and software approach. AEER EMD will use a competitive contracting strategy. Supporting efforts utilize Qualified Product List (QPL) manufacturers and existing contracting vehicles where appropriate for development efficiency.</p> <p>(U) E. SCHEDULE PROFILE</p> <table border="0"> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td>4Q/01 AEER MS-II</td> <td>3Q/02 GASS MS-III</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td>3Q/00 Q/U CDR 2Q/00 GASS PDR #1 4Q/00 GASS CDR #1 4Q/00 GASS PDR #2</td> <td>2Q/01 GASS PDR#3/CDR#2 3Q/01 GASS PDR#4 4Q/01 GASS CDR#3</td> <td>3Q/02 AEER SDR 4Q/02 AEER PDR 1Q/02 GASS CDR #4</td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td>4Q/01 Q/U DT/OT</td> <td>1Q/02-2Q/03 GASS TTPRR*</td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td>1Q/02 AEER SOURCE CONTRACT</td> </tr> </tbody> </table> <p>* TTPRR – Trainer Test Procedures and Results Report</p>				FY 2000	FY 2001	FY 2002	(U) Program Milestones		4Q/01 AEER MS-II	3Q/02 GASS MS-III	(U) Engineering Milestones	3Q/00 Q/U CDR 2Q/00 GASS PDR #1 4Q/00 GASS CDR #1 4Q/00 GASS PDR #2	2Q/01 GASS PDR#3/CDR#2 3Q/01 GASS PDR#4 4Q/01 GASS CDR#3	3Q/02 AEER SDR 4Q/02 AEER PDR 1Q/02 GASS CDR #4	(U) T&E Milestones		4Q/01 Q/U DT/OT	1Q/02-2Q/03 GASS TTPRR*	(U) Contract Milestones			1Q/02 AEER SOURCE CONTRACT
	FY 2000	FY 2001	FY 2002																			
(U) Program Milestones		4Q/01 AEER MS-II	3Q/02 GASS MS-III																			
(U) Engineering Milestones	3Q/00 Q/U CDR 2Q/00 GASS PDR #1 4Q/00 GASS CDR #1 4Q/00 GASS PDR #2	2Q/01 GASS PDR#3/CDR#2 3Q/01 GASS PDR#4 4Q/01 GASS CDR#3	3Q/02 AEER SDR 4Q/02 AEER PDR 1Q/02 GASS CDR #4																			
(U) T&E Milestones		4Q/01 Q/U DT/OT	1Q/02-2Q/03 GASS TTPRR*																			
(U) Contract Milestones			1Q/02 AEER SOURCE CONTRACT																			

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Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 6 of 8)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-05			0604261N Acoustic Search Sensors			H0480 ASW Sensors & Processors						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	C/FFP	Sparton, FL	3.178								3.178	3.178
	C/FFP	USSI, IN	2.710								2.710	2.710
	C/CPFF	Misc Contracts	1.000								1.000	1.000
Software Development	C/CPIF	Northrop Grumman, NY	30.814	8.300	11/00	6.200	11/01				45.314	46.091
	C/CPFF	Misc GASS Con	12.112	0.382	11/00	0.340	11/01				12.834	13.263
	C/CPFF	Misc /P-3 Baseline Cont's	5.800	2.500	Various						8.300	8.300
	WX	Misc In-House	0.724		11/00	1.137	11/01			Continuing	Continuing	
Government Engineering Support	WX	Misc In-House	26.715	6.768	10/00	7.022	10/01			Continuing	Continuing	
Subtotal Product Development			83.053	17.950		14.699				Continuing	Continuing	
Remarks:												
Subtotal Support												
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-05			PROGRAM ELEMENT 0604261N Acoustic Search Sensors			PROJECT NUMBER AND NAME H0480 ASW Sensors & Processors						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	Misc In-House	1.107	0.950	11/00	0.900	11/01			Continuing	Continuing	
Subtotal T&E			1.107	0.950		0.900				Continuing	Continuing	
Remarks:												
Contractor Support Services	C/FFP	Misc/Contracts	5.204	1.051	11/00	1.083	11/01				7.338	8.455
Program Management Support	WX	Misc In-House	6.453	0.140	10/00	0.143	10/01			Continuing	Continuing	
SBIR Assessment				0.454								
Subtotal Management			11.657	1.645		1.226				Continuing	Continuing	
Remarks:												
Total Cost			95.817	20.545		16.825				Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 106

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 8)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604262N / V-22					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	6,413.186	175.919	146.589*	546.735							
H1425 V-22	6,413.186	175.919	146.589*	546.735							
Quantity of RDT&E Articles	4										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The V-22 Osprey is a Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and United States Special Operations Command (USSOCOM). The V-22 will replace the CH-46E and CH53A/D in the Marine Corps (MV-22); supplement the H-60 in the Navy (HV-22); and replace the H-53 and H-60; and augment the C-130 in the Air Force and USSOCOM (CV-22). The V-22 will be capable of flying over 2100 nautical miles with a single refueling, giving the services the advantage of a Vertical/Short Take-off, and Landing (VSTOL) aircraft that can rapidly self-deploy to any location in the world.

As a result of the December 11, 2000 mishap we have conducted comprehensive external and internal review of the program. An independent review panel was appointed to conduct this review. This budget reflects the recommended funding changes to correct deficiencies and move forward.

(U) JUSTIFICATION FOR BUDGET ACTIVITY:

This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT (EMD) because it encompasses engineering and manufacturing development of new end-items prior to production approval decision. The four RDT&E test aircraft are production representative.

*Note: FY-01 does not reflect supplemental adjustments.

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22				PROJECT NUMBER AND NAME H1425 / V-22					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	6,413.186	175.919	146.589*	546.735							
RDT&E Articles Qty	4										

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The V-22 Osprey is a Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the strike rescue needs of the Navy, and the special operations needs of the Air Force and United States Special Operations Command (USSOCOM). The V-22 will replace the CH-46E and CH53A/D in the Marine Corps (MV-22); supplement the H-60 in the Navy (HV-22); and replace the H-53 and H-60; and augment the C-130 in the Air Force and USSOCOM (CV-22). The V-22 will be capable of flying over 2100 nautical miles with a single refueling, giving the services the advantage of a Vertical/Short Take-off, and Landing (VSTOL) aircraft that can rapidly self-deploy to any location in the world.

As a result of the December 11, 2000 mishap we have conducted comprehensive external and internal review of the program. An independent review panel was appointed to conduct this review. This budget reflects the recommended funding changes to correct deficiencies and move forward.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$127.021) Completed CV-22 remanufacture and modification efforts. Began CV-22 flight tests (Mar 00). Continued CV-22 software development efforts. Began Terrain Following/Terrain Avoidance (TF/TA) radar development testing for the CV-22. Continued development of maintenance training equipment. Continued CV-22 Operational Flight Trainer / Full Fidelity Simulator (OFT/FFS) development. Continued CV-22 peculiar ILS supportability analysis, publications and spares support. Continued Weapons Replacement Assembly/Test Program Sets (WRA/TPS) development. Continued Fatigue Test Article (FTA) efforts (completed 1/2 lifetime testing Jan 00). Continued Power By The Hour (PBTH) support of the engine. Conducted natural icing tests. Conducted Blade Fold Wing Stow endurance testing. Completed Static Test Article (STA) test to failure. Continued R&D efforts on aircraft #8 & #10.

- (U) (\$48.898) Continued in-house field activity support of Integrated Test Teams (ITT's) and Integrated Product Teams (IPT's), logistics and training activities, the manned flight simulator and numerous other efforts at over 12 activities. Participated in natural icing test. Conducted MV-22 OPEVAL and support (Nov 99-Jul 00). Continued CV-22 peculiar logistic support analysis and site activation planning. Continued R&D efforts on aircraft #8 & #10. Downsized hangar facility at Patuxent River. Prepared Edwards Air Force Base for arrival of CV-22 aircraft #7 and #9. Provided flight test support for CV-22 aircraft #7 and #9. Participated in CV-22 radar and development testing. Funded fuel costs for test aircraft and/or engines.

*Note: FY-01 does not reflect supplemental adjustments.

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Exhibit R-2a, RDTEN Project Justification
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604262N / V-22	H1425 / V-22
<p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$95.264) Continue CV-22 developmentefforts by Bell-Boeing. Provide engine support and repair of repairablesfor CV-22 flight testing. Continue CV-22 software developmentefforts. Continue TF/TA radar development testing for the CV-22. Continue development of maintenance training equipment. Complete CV-22 Operational Flight Trainer / Full Fidelity Simulator (OFT/FFS) development. Conduct natural icing tests. Continue R&D efforts on aircraft #8 & #10. - (U) (\$51.325) Continued in-house field activity support of ITT's and IPT's, logistics and training activities, the manned flight simulator and numerous other efforts at over 12 activities. Continue R&D efforts on aircraft #8 & #10. Provide R&D support in the areas of R&M data analysis, loads and dynamics, electromagneticenvironmentaleffects, CV-22 flight controls, survivability,subsystems, shipboard compatibility, propulsion, CV-22 avionics, facilities, computer support, structures, communications, Small Business InnovativeResearch, etc. Provide flight test support for CV-22 aircraft #7 and #9. Provide engineering and maintenance support for CV-22 flight testing. Fund fuel costs for test aircraft and/or engines. <p>*FY 01 does not reflect OSD Supplemental in the amount of \$80.0M to continue MV development efforts and start development of two CV aircraft.</p> <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$103.152) Contractor activities: Continue CV-22 developmentefforts by Bell-Boeing. Provide engine support and repair of repairablesfor CV-22 flight testing. Complete CV-22 software developmentefforts. Continue TF/TA radar developmenttesting for the CV-22. Continue developmentof maintenance training equipment. Continue Defensive Weapon System developmentand integration efforts. Continue development efforts on aircraft #8. Continue WRA/TPS development. Conduct CV-22 IOT&E. Begin development of Environmental Control System. - (U) (\$21.606) Navy field activities: Continued in-house field activity support of ITT's and IPT's, logistics and training activities, the manned flight simulator and numerous other efforts at over 12 activities. Provide support for the Defensive Weapon System developmentand integration efforts. Provide support for the EnvironmentalControl System developmentefforts. Continue developmentefforts on aircraft #8. Provide R&D support in the areas of R&M data analysis, loads and dynamics, electromagneticenvironmentaleffects, CV-22 flight controls, survivability,subsystems, shipboard compatibility, propulsion, CV-22 avionics, facilities, computer support, structures, communications, Small Business Innovative Research, etc. - (U) (\$3.629) Non-Navy field activities: Provide flight test support for CV-22 aircraft #7 and #9. Provide engineeringand maintenance support for CV-22 flight testing. Fund fuel costs for test aircraft and/or engines. - (U) (\$100.000) Continue the development of two CV aircraft for IOT&E. - (U) (\$318.326) Continue logistics, flight test, and flight test support, address correction of deficiencies, and provide funding for the MV and CV cost overruns. 		

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Exhibit R-2a, RD TEN Project Justification
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604262N / V-22	H1425 / V-22	

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	181.876	148.168	95.696
(U) Adjustments from the President's Budget:	-5.957	-1.579	451.039
(U) FY 2002/2003 OSD/OMB Budget Submit:	175.919	146.589	546.735

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 decrease of \$5.957 million reflects a decrease of \$3.335 million for a Small Business Innovative Research assessment, a decrease of \$1.897 million reprioritization of requirements within the Navy, a decrease of \$.013 million for a Federal Technology Transfer and a decrease of \$.712 million for a Congressional Reduction. The FY2001 decrease of \$1.579 million reflects a decrease of \$1.037 million for a Congressional Reduction, a decrease of \$.322 million for the Government-wide Recission and a decrease of \$.220 million for reprioritization of requirements within the Navy. The FY 2002 increase of \$451.039 million consists of an increase of \$410.0 million for the restructuring of the program, an increase of \$6.950 million for a Logistics Shortfall, an increase of \$18.000 million for an Environmental Control System, an increase of \$8.000 million for Continued Development, a decrease of \$.340 due to revised economic assumptions and an increase of \$8.407 million for a reprioritization of requirements within the Navy.

(U) Schedule: MV-22 OPEVAL completion delayed due to an operational pause following the crash of aircraft #14 on 8 April 2000 and of Aircraft #18 on 11 December 2000. A revised Acquisition Program Baseline will be submitted in the 1st Quarter of FY 02 .

(U) Technical: Current temperatures for passengers on-board the V-22 can reach high levels. Development of an environmental control system will be initiated in FY02 with the goal to achieve a maximum temperature of 85 degrees.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002
16400 / V-22			
V-22 APN-1	848.313	1,126.433*	1,009.881
V-22 Advance Procurement	70.344	70.927	48.428
V-22 APN-5	0.000	0.000*	35.000
V-22 APN-6 Spares	70.592	133.946	232.899
Related RDT&E:			
0401318F CV-22	0.000	0.000	10.008
1160404BB CV-22	33.522	43.773	52.661

*Note: FY01 does not reflect supplemental adjustments for APN-1 and APN-5..

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 4 of 7)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604262N / V-22	PROJECT NUMBER AND NAME H1425 / V-22																				
<p>(U) D. ACQUISITION STRATEGY: The V-22 program is designed to provide an aircraft to meet the medium lift amphibious/vertical assault needs of the USMC and the special operations needs of the USSOCOM. The aircraft will be capable of operations from aviation and air capable ships, as well as from unimproved landing sites throughout the world. The tiltrotor aircraft combines the speed, range and fuel efficiency normally associated with turboprop aircraft with the vertical take-off/landing and hover capabilities of helicopters. The special operations aircraft (CV-22) will consist of the baseline V-22 aircraft (MV-22) configuration plus a terrain following radar, additional fuel tanks, radios and flare/chaff dispensers, radar jammer and warning receiver, and infrared countermeasures. The CV-22 will be approximately 90% common with the MV-22.</p> <p>(U) E. SCHEDULE PROFILE:</p> <table border="0"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td></td> <td>TBD Program Reviews</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) T&E Milestones</td> <td></td> <td></td> <td>1Q RESUME FLIGHT TEST</td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	(U) Program Milestones			TBD Program Reviews	(U) Engineering Milestones				(U) T&E Milestones			1Q RESUME FLIGHT TEST	(U) Contract Milestones			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																			
(U) Program Milestones			TBD Program Reviews																			
(U) Engineering Milestones																						
(U) T&E Milestones			1Q RESUME FLIGHT TEST																			
(U) Contract Milestones																						

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604262N / V-22			H1425 / V-22							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date				Cost to Complete	Total Cost	Target Value of Contract
Prime Contractor - Airframe	SS CPAF	BELL-BOEING, PaxRiver, MD	3,536.323	92.307	10/00	450.700	10/01					4,079.330	
Award Fee (NON ADD)	SS/CPAF	BELL-BOEING, PaxRiver, MD	165.347	6.884	10/00	6.826	10/01					179.057	
Prime Contractor - Engine	C/CPIF	ALLISON, INDIANAPOLIS, IN	178.506	2.957	10/00	2.500	10/01					183.963	
Field Activity	WX	NAWCAD PAX RIVER, MD		32.016	10/00	54.013	10/01					86.029	
Field Activity	MIPR	EDWARDS AFB, CA		5.451	10/00	7.900	10/01					13.351	
Field Activity	WX	NAWCAD LAKEHURST, NJ		5.238	10/00	12.500	10/01					17.738	
Field Activity	VARIOUS	VARIOUS	2,870.837	8.620	10/00	19.100	10/01					2,898.557	
Subtotal Product Development			6,585.666	146.589		546.713					0.000	7,278.968	
Remarks: Award Fee is a NON-ADDITIVE number. Fees actually awarded range from 67% to 86%. Target value of Bell-Boeing contract does not include anticipated overrun, ACO orders, or new efforts not already on contract (FY01-07), such as the gun and environmental control system. Breakout of "Cost to Complete" between prime contractor and field activities is an estimate and actual split will depend on negotiated value of future contract modifications, such as the gun and environmental control system. Prior year cost breakout is not available by specific field activity. Field activity prior year costs have been subtotaled and placed in the "various" category.													
NOT													
SEPARATELY													
PRICED													
Subtotal Support													
Remarks:													

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604262N / V-22			PROJECT NUMBER AND NAME H1425 / V-22						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date				Cost to Complete	Total Cost	Target Value of Contract
NOT SEPARATELY PRICED													
Subtotal T&E													
Remarks:													
ASN or HQMC directed studies	various	various	3.467									3.467	
Subtotal Management			3.467									3.467	
Remarks:													
Total Cost			6,589.133	146.589		546.713					0.000	7,282.435	
Remarks:													

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						0604264N/Aircrew Systems Development					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	0.000	17.412	28.672	7.717						Continuing	Continuing
W0606 Aircrew Systems Development	0.000	*	**	***						Continuing	Continuing
W2879 Joint Ejection Seat Program	0.000	0.000	10.343	0.000							10.343
Quantity of RDT&E Articles	Not Applicable										
<p>* The FY 2000 Budget reflects a \$7.500M Congressional add for Ejection Seat Testing and Stability Development effort executed under project unit W2779; which, has been decreased by \$.211 M for Congressional undistributed reductions.</p> <p>** The FY 2001 Budget reflects a \$3.500M Congressional add for Joint Helmet Mounted Cueing System; which will be executed under W0606.</p> <p>***The FY 2001 Budget reflects a \$4.000M Congressional add for Modular Flight Helmet/Adv Visionics Helmet Sys/HAILSS; which will be executed under W0606.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Aircrew Systems Development program provides engineering and manufacturing development (EMD) of Aviation Life Support Systems to protect aircrews from current and future threats including: directed energy weapons, chemical/biological/radiological agents/fallout, ballistic projectiles, temperature extremes, heat/fire, low concentration oxygen environments, high dynamic forces during emergency egress, and high “G” forces. The program also provides development for the following capabilities: head protection, in flight restraint and stability emergency egress and descent, escape and evasion, survival and rescue, crash protection, and anthropometric sizing for small aircrew. Acquisition initiatives include: competition, the application of streamlining initiatives, use of non-developmental items (NDI), joint and tri-service developments, and the pursuit of NATO/allied cooperative ventures, which expedite introduction of new products into Navy and Marine Corps fixed and rotary wing aircraft, reduce costs, and promote commonality.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</p> <p>This program is funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p>											

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 1 of 12)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development					PROJECT NUMBER AND NAME W0606/Aircrew Systems Development					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	0.000	17.412	18.329	7.717						Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) SUBPROJECTS:

- (U) ESCAPE AND CRASH SAFETY: Naval Aircrew Common Ejection Seat Pre-Planned Product Improvement (NACES P3I), Joint Ejection Seat Qualification and Improvements, Advanced Crashworthy Aircrew Survival Systems (ACASS), Joint Cockpit Air Bag System (JCABS), Crashworthy Troop Seats (CWTS), Joint Ejection Seat Program (JESP), Ejection Seat Integration and Qualification and NON-NACES and Small Occupant Escape System.
- (U) LIFE SUPPORT/THREAT PROTECTION: Extreme Cold Weather Improvement Program/State of the Art Survival Items (ECWIP/SOASI), Personal Protective Apparel (PPA) formally AMELIA, Aircrew Accommodation Expansion Program (AAEP), Aviation Oxygen Systems (AOS), Aircrew Cooling, Helicopter Advanced Integrated Life Support Systems (HAILSS), Liquid Oxygen to ON-Board Oxygen Generating System (LOX to OBOGS), Common Smoke Mask (CSM), Joint Protective Air Crew Ensemble (JPACE), Combat Survivor Evader Locator (CSEL), and Tri-Service Safety Harness (TSSH).
- (U) HELMET, VISION AND DISPLAYS: Night Vision Devices (NVD), Joint Helmet Mounted Cueing System (JHMCS), Integrated Day/Night All Weather Helmet (IDNAWH), Panaramic Night Vision Goggle (PNVG), JHMCS Night Attack and Agile Frequency Laser Eye Protection, and Laser Eye Protection Improvement Program (LEPIP).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$ 12.632) NACES P3I: Completed and approved Phase I of NACES Physical Configuration Audit and commenced aircraft (A/C) platform installation. Conducted subsystem demonstration testing (DT) on selected Phase II candidate technologies and initiated system DT testing, AV8B: Conducted system redesign efforts and preliminary component DT testing, CWTS: Conducted H-1 DT and initiated system testing. Continued preliminary design on H-3 and H-46, NON-NACES and Small Occupant Escape System Improvements: Conducted preliminary documentation for Request For Proposal (RFP).
- (U) (\$ 1.717) ECWIP/SOASI: Completed and Approved ECP's of improved cold weather clothing and survival items. Completed Standard Operating Procedure (SOP) for initiation of evaluations of state of the art survival items as part of the P3I effort. PPA: Continued P3I effort to increase accommodation and protection by the development of a modular multi-climate protection clothing system, AAEP: Completed cockpit mappings of Naval rotary wing aircraft and commenced mapping of Naval Fixed Wing non-ejection seat aircraft. HAILSS: Continued demonstration and validation of technology options. Initiated DT studies.
- (U) (\$ 3.063) NVS: Continued to monitor and participate in PNVG and Flight Demonstration, JHMCS: Completed F/A-18 C/D DT and Operational Assessment (OA), LRIP I, IDNAWH: Completed Concept Ops, Completed integration of Net-Centric MOUT, JHMCS P3I: Commenced studies.

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Exhibit R-2a, RDTEN Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604264N/Aircrew Systems Development	W0606/Aircrew Systems Development
<p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$ 4.969) NACES P3I: Continue Phase I (A/C) platform installations. Continue minimal subsystem demonstration testing (DT) on Phase II candidate technologies. AV-8B: Complete system DT/OT commence A/C platform installation, CWTS: Complete H-1 DT system testing and incorporate into A/C OT testing. Commence preparation of H-3/H-46 platform ECP's, NON-NACES and Small Occupant Escape System Improvements: Prepare and release Request For Proposal (RFP). Purchase long lead test hardware, Joint Ejection Seat Program (JESP): Conduct JESP preliminary design reviews and design tradeoffs. - (U) (\$ 2.688) ECWIP/SOASI: Continue evaluations and authorizations of state of the art survival items. PPA: Selection of high performance materials and advanced designs for multi-climate protection system components and completion of anti-exposure system accommodation efforts. AAEP: Collect Naval fixed wing non-ejection aircraft cockpit data and release restriction codes. HAILSS: Select validated technology options and commences full scale DT of selection. LOX to OBOGS: Commence DT of replacement of Liquid Oxygen System with OBOGS for Naval aircraft. CSM: Initiate determination and validate requirements, and conduct initial product demonstrations of full face smoke masks and O2 containment devices for Naval fixed wing non-ejection aircraft. JPACE: Continue with DT and completion of initial source selection for fabric and garment producers, TSSH: Initiate determination and validate requirements, Conduct initial product demonstrations. - (U) (\$ 10.561) NVS: Continue monitoring and participating in PNVG product improvements, JHMCS: F/A-18 E/F DT/OT, LRIP II, reengineer F/A-18 C/D integration, F/A-18 C/D DT, JHMCS P3I: Complete studies, HAILSS VISIONICS: Develop Visionics and Helmet Shell, Helmet DT. - (U) (\$111) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68. <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$ 3.620) NACES P3I: Conduct subsystem/system design interface and demonstration testing (DT) on selected Phase II candidate technology improvements. Conduct system DT/OT on selected technologies, AV-8B: Complete A/C platform installation, CWTS: Initiate H-3/H-46 DT testing, NON-NACES and Small Occupant Escape System Improvements: Conduct DT on selected candidate restraint and stability subsystem technologies, Joint Ejection Seat Program (JESP): Commence Subsystem DT testing. - (U) (\$ 1.803) ECWIP/SOASI: Continue evaluations and authorizations of state of the art survival items. PPA: Initiate DT and Fleet assessment of potential multi-climate protection system components. AAEP: Publish Naval fixed wing non-ejection aircraft accommodation envelopes and commence development of detailed cockpit Computer Aided Drafting (CAD) images. HAILSS: Continue full scale DT of demonstrated technology. LOX to OBOGS: Continue DT of replacement of Liquid Oxygen System with OBOGS for Naval aircraft. CSM: Commence DT of full smoke masks and O2 containment devices for Naval fixed wing non-ejection aircraft. CSEL: Conduct testing/logistics planning and development. JPACE: Continue with DT phase and completion of risk reduction testing. TSSH: Commence and Complete DT, Prepare ECP. - (U) (\$ 2.294) NVS: Continue to monitor and participate in PNVG testing, JHMCS: MS III, JHMCS: Night Attack Demonstration. Laser Spectacle Improvements: Initiate demonstration and Testing, IDNAWH: Program Design Review (PDR), 		

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Exhibit R-2a, RDTEN Project Justification
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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																													
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604264N/Aircrew Systems Development	PROJECT NUMBER AND NAME W0606/Aircrew Systems Development																														
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: right;">FY2000</th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">14.222</td> <td style="text-align: right;">11.027</td> <td style="text-align: right;">8.881</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">3.19</td> <td style="text-align: right;">7.302</td> <td style="text-align: right;">-1.164</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: right;">17.412</td> <td style="text-align: right;">18.329</td> <td style="text-align: right;">7.717</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net increase of \$3.190 million consists of a \$3.666 million increase for the AV-8B BTR Seat Redesign System; offset by a \$.220 million decrease for reprioritization of requirements within the Navy, a \$.201 million decrease for a Small Business Innovative Research (SBIR) Assessment, a \$.055 million decrease for a Congressional Recission. The FY 2001 net increase of \$7.302 million consists of a \$3.500 million increase for the Joint Helmet Mounted Cueing System and \$4.000 million Congressional Add for HAILSS; offset by a \$.028 million decrease for a reprioritization of requirements within the Navy, a \$.130 million decrease for a Congressional Reduction, and a \$.040 million decrease for a Congressional Recission. FY 2002 net decrease of \$1.164million consists of a \$1.034 million decrease for reprioritization of requirements within the Navy and a \$.130 million decrease for economic assumptions.</p> <p>(U) Schedule: FY 00 - IDNAWH performed a concept OPS in addition to achieving MS II. The program name AMELIA has been changed to Personal Protective Apparel (PPA). JHMCS has added an LRIP I and has performed a demonstration test and not an operational test. CWTS for the H-3/H-46 delayed demonstration testing (DT) until FY-02. ECWIP/SOASI was forced to complete an ECP prior to moving into a demonstration test. FY 01 - IDNAWH will perform a demonstration test and LRIP II and not a PDR/CDR. ECP has been delayed for CWTS from 1Q to 3Q because of platform attention being shifted to higher priority efforts. JHMCS has added a demonstration test to the previous announced operational test. AILSS program has been better defined, and an ECP avoided by being replaced by HAILSS. PPA will address demonstration testing and not ECP's. Tri-Service Safety Harness is a new program start.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">To Complete</th> <th style="text-align: right;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>Aviation Life Support - OPN</td> <td style="text-align: right;">36492</td> <td style="text-align: right;">28.664</td> <td style="text-align: right;">21.035</td> <td style="text-align: right;">Continuing</td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table> <p>Related RDT&E</p> <p>(U) P.E. 0603216N (Aviation Survivability), P.E. 0604706F (Life Support Equipment, related Air Force efforts), P.E. 0604713A (Combat Feeding, Clothing and Equipment, related Army efforts. Coordinated through the OSD sponsored Tri-Service Life Support RDT&E Steering Committee), P.E. 0604384BP (Chemical Biological (CB) program), P.E. 06084201F (Common Avionics related Air Force efforts).</p> <p>(U) D. ACQUISITION STRATEGY: Commercial Off-The-Shelf (COTS)/NDI where possible, cost plus award fee contracts, Cost as an Independent Variable. Majority of programs non-ACAT programs with no specific acquisition strategies.</p>						FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	14.222	11.027	8.881	(U) Adjustments from the President's Budget:	3.19	7.302	-1.164	(U) FY 2002 President's Budget Submit:	17.412	18.329	7.717	<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	To Complete	Total Cost	Aviation Life Support - OPN	36492	28.664	21.035	Continuing	Continuing
	FY2000	FY2001	FY2002																													
(U) FY 2001 President's Budget:	14.222	11.027	8.881																													
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<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	To Complete	Total Cost																											
Aviation Life Support - OPN	36492	28.664	21.035	Continuing	Continuing																											

R-1 SHOPPING LIST - Item No. 108

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604264N/Aircrew Systems Development	W0606/Aircrew Systems Development	
(U) Program Milestones	<u>FY 2000</u> 2Q/00 AAEP* 2Q/00 JHMCS LRIP I 3Q/00 IDNAWH MS II	<u>FY 2001</u> 2Q/01 AAEP* 3Q/01 CWTS H-3,H-46 ECP 4Q/01 NACES II P3I DT 3Q/01 NON-NACES RFP 3Q/01 JHMCS LRIP II 3Q/01 IDNAWH DEMO/ LRIP II 3Q/01 JHMCS F/A-18 C/D INTEGRATION DT	<u>FY 2002</u> 2Q/02 AAEP* 3Q/02 NACES II P3I ECP 4Q/02 NON-NACES DT 2Q/02 JHMCS MS III 2Q/02 JALEPV MS III
(U) Engineering Milestones	3Q/00 PPA DT	4Q/01 PPA DT 4Q/01 TSSH DT	4Q/02 PPA DT 4Q/02 TSSH DT/ECF
(U) T&E Milestones	4Q/00 ECWIP/SOASI** 3Q/00 CWTS H-1 DT	4Q/01 ECWIP/SOASI** 2Q/01 HAILSS DT 3Q/01 CWTS H-1 DT	4Q/02 ECWIP/SOASI** 2Q/02 HAILSS DT 2Q/02 CWTS H-3/H-46 DT
	4Q/00 NACES P3I PCA	4Q/01 NACES II P3I DT	3Q/02 NACES II P3I DT/OT
	3Q/00 NON-NACES DT	2Q/01 NON-NACES DT	4Q/02 NON-NACES DT
	1Q/00 JHMCS FA-18 DT/OA	1Q/01 JHMCS FA-18 E/F DT/OT	3Q/02 JESP DT 2Q/02 JHMCS NIGHT ATTACK DEMO 2Q/02 PNVG DEMO
			4Q/02 CSEL OT 2Q/02 CSM DT
(U) Contract Milestones			
* AAEP covers numerous platforms. This denotes milestones reached for various platform(s) during Fiscal Year. **ECWIP/SOASI covers numerous platforms. This denotes milestones reached for various platform(s) during Fiscal Year.			

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Exhibit R-2a, RDTEN Project Justification
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY								June 2001				
RDT&E, N / BA-5			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			0604264N/AIRCREW SYSTEMS DEVELOPMENT			W0606/AIRCREW SYSTEMS DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	33.552	3.062	Various	2.418	Various			Continuing	Continuing	
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCWD, CHINA LAKE,CA	1.305	0.950	Various	1.571	Various			Continuing	Continuing	
Systems Engrg. (Misc. less \$1M)	WX/RX	NSWC, INDIAN HEAD, MD		0.200	Various	0.225	Various			Continuing	Continuing	
JHMCS Hardware Development	MIPR	WPAFB, OH	6.279	6.500	03/01					Continuing	Continuing	
JHMCS Hdwr.Dev. (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD				0.225	03/02					
JHMCS Hardware Development	WX/RX	NAWCAD, PAX RIVER, MD		2.870	03/01							
Subtotal Product Development			41.136	13.582		4.439				Continuing	Continuing	
Remarks:												
Developmental T&E(Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	25.977	2.998	Various	1.600	Various			Continuing	Continuing	
Developmental T&E(Misc. less \$1M)	WX/RX	NAWCWD, CHINA LAKE,CA	4.630	0.300	03/01	0.475	02/02			Continuing	Continuing	
Developmental T&E(Misc. less \$1M)	WX/RX	NADEP, CHERRY PT. NC	0.221								0.221	
Developmental T&E	WX/RX	NAWCAD, PAX RIVER, MD	5.939								5.939	
Developmental T&E	WX/RX	NAWCWD, CHINA LAKE,CA	2.424								2.424	
Operational T&E (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	4.933								4.933	
Subtotal Support			44.124	3.298		2.075				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604264N/AIRCREW SYSTEMS DEVELOPMENT			W0606/AIRCREW SYSTEMS DEVELOPMENT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Integrated Log.Supt. (Misc.less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	15.256	0.799	Various	0.730	Various				16.785	
Subtotal T&E			15.256	0.799		0.730					16.785	
Remarks:												
MISC (LESS THAN \$1M)	WX/RX	NAWCAD, PAX RIVER, MD	5.819	0.539	Various	0.473	Various			Continuing	Continuing	
SBIR				0.111								
Subtotal Management			5.819	0.650		0.473				Continuing	Continuing	
Remarks:												
Total Cost			106.335	18.329		7.717				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604264N/Aircrew Systems Development					W2879/Joint Ejection Seat Program					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	0.000	0.000	10.343	0.000							10.343
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) SUBPROJECTS:

- (U) ESCAPE AND CRASH SAFETY: Joint Ejection Seat Program (JESP).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS: N/A

2. FY 2001 PLANS:

- (U) (\$10.343) JESP: Prepare Request for Proposal for Phase II, issue contract award, and start preliminary Demonstration Test (DT) efforts.

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Exhibit R-2a, RDTE Project Justification
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:																
		June 2001																
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																
RDTE, N / BA-5	0604264N/Aircrew Systems Development	W2879/Joint Ejection Seat Program																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table><thead><tr><th></th><th>FY2000</th><th>FY2001</th><th>FY2002</th></tr></thead><tbody><tr><td>(U) FY 2001 President's Budget:</td><td></td><td></td><td></td></tr><tr><td>(U) Adjustments from the President's Budget:</td><td></td><td>10.343</td><td></td></tr><tr><td>(U) FY 2002/2003 DON Budget Submit:</td><td></td><td>10.343</td><td></td></tr></tbody></table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2001 net increase of \$10.343 million consists of a \$10.439 million increase for a Congressional Add; offset by a \$.073 million decrease for a Congressional Reduction and a \$.23 million decrease for a Congressional Recission.</p> <p>(U) Schedule: Phase II RFP 2nd Qtr/01. Contract award 3rd Qtr/01.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: TBD</p> <p>Related RDT&E</p> <p>(U) P.E. 0603216N (Aviation Survivability), P.E. 0604706F (Life Support Equipment, related Air Force efforts), P.E. 0604713A (Combat Feeding, Clothing and Equipment, related Army efforts. Coordinated through the OSD sponsored Tri-Service Life Support RDT&E Steering Committee), P.E. 0604384BP (Chemical Biological (CB) program), P.E. 06084201F (Common Avionics related Air Force efforts).</p> <p>(U) D. ACQUISITION STRATEGY: Commercial Off-The-Shelf (COTS)/NDI where possible, cost plus award fee contracts, Cost as an Independent Variable. There is no requirement for Milestone Reviews or a Milestone Decision Authority. The qualification program will require execution oversight and a management structure consistent with an ACAT III program.</p>				FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:				(U) Adjustments from the President's Budget:		10.343		(U) FY 2002/2003 DON Budget Submit:		10.343	
	FY2000	FY2001	FY2002															
(U) FY 2001 President's Budget:																		
(U) Adjustments from the President's Budget:		10.343																
(U) FY 2002/2003 DON Budget Submit:		10.343																

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 9 of 12)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604264N/Aircrew Systems Development	W2879/Joint Ejection Seat Program
	<u>FY 2000</u>	<u>FY 2001</u>
(U) Program Milestones		<u>FY 2002</u>
(U) Engineering Milestones		
(U) T&E Milestones		
	4Q/01 JESP DT	3Q/02 JESP DT
(U) Contract Milestones	4Q/01 JESP CA 3Q/01 JESP RFP	

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Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 10 of 12)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604264N/AIRCREW SYSTEMS DEVELOPMENT			W2879/Joint Ejection Seat Program						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Systems Engrg. (Misc. less \$1M)	WX/RX	NAWCAD, PAX RIVER, MD		0.343	Various						0.343	
Subtotal Product Development				0.343							0.343	
Remarks:												
Developmental T&E	MIPR	WPAFB, OH		2.500	12/00						2.500	
Developmental T&E	MIPR	WPAFB, OH		2.500	12/00						2.500	
Developmental T&E	MIPR	WPAFB, OH		2.500	09/01						2.500	
Developmental T&E	MIPR	WPAFB, OH		2.500	09/01						2.500	
Subtotal Support				10.000							10.000	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 11 of 12)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604264N/AIRCREW SYSTEMS DEVELOPMENT				PROJECT NUMBER AND NAME W2879/Joint Ejection Seat Program					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract	
Subtotal T&E													
Remarks:													
Subtotal Management													
Remarks:													
Total Cost				10.343							10.343		
Remarks:													

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /						0604270N Electronic Warfare Development					
BA-5											
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost		208.163	133.399	112.473							
E0556 EW Counter Response		130.982	89.081	84.820							
E2175 Tactical Air Electronic Warfare	318.491	74.575	38.897	25.635							
E2635 Integrated Defensive Electronic C			2.972								
R2260 Specific Emitter Identification		1.740	1.513	1.012							
Z1742 EW Technical Development and Testing		0.866	0.936	1.006							
Quantity of RDT&E Articles	458	2	10	2							
*FY2001 budget reflects a \$23,000K Congressional add for Link-16 executed under E2781, a \$8,500K Congressional add for Spraycool technology executed under E2782, and \$3,000K for Loco GPSI executed under E2422.											
**FY2001 budget reflects a \$3,000k Congressional add for Integrated Defense Electronic Counter Measures executed under project E2635; which has been revised by \$28k for Congressional undistributed adjustments.											
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This element includes development of electronic warfare systems for the United States Navy (USN), United States Marine Corps (USMC), and United States Army (USA) tactical aircraft, USMC helicopters, surface combatants, data link vulnerability assessments, precision targeting, USMC communications and non-communications jammers, and development and testing of electronic warfare devices for emergency contingencies.											
(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to full rate production approval decision.											

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604270N Electronic Warfare Development					E0556 EW Counter Response					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		130.982	89.081	84.820							
RDT&E Articles Qty			8	2							
*FY2001 budget reflects a \$23,000K Congressional add for Link-16 executed under E2781, a \$8,500K Congressional add for Spraycool technology executed under E2782, and \$3,000K for Loco GPSI which will be executed under E2422.											
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The EA-6B weapon system is designed for jamming and destruction of enemy landbased, shipborne and airborne command, control and communications (C3) and radars associated with early warning, target acquisition surveillance, anti-aircraft artillery, air-to-surface, surface-to-surface, and surface-to-air missiles. In this capacity, it will support carrier based tactical aircraft, battle group operations, and joint forces, in dense radar controlled environments. The efforts under this program element (PE) provide for the electronic countermeasures response to these advanced threat weapon systems and C3 networks which are expanding in density and technical complexity. This PE funds the continuing development and integration of all EW systems for the EA-6B electronic support aircraft. The test articles being funded are; two EA-6B aircraft modified to support the Improved Capability (ICAP) III program and eight Low Band Transmitter (LBT) Engineering Development Models (EDMs). The two EA-6B aircraft modified to the ICAP III configuration are for the Engineering and Manufacturing Development (E&MD) phase of the program, (one validation and one verification aircraft will deliver in FY 2001). These aircraft will be used as test articles during government test and evaluation (TECHEVAL/OPEVAL). The LBT EDMs are broken out as three LBT Antenna Set EDMs and five Amplifier Set EDMs . Three LBT Antenna Set EDMs and three Amplifier Set EDMs will be delivered in FY 2001. Two Amplifier Set EDMs will be delivered in FY 2002. The ALQ-99 LBT Antenna Group will provide an expanded war fighting capability against the early warning/acquisition radars and communication links of modern integrated air defense systems. The LBT entered E&MD in September 1996, followed by Full Rate Production (FRP) approval (Milestone III) anticipated in 1st quarter FY 2004. This effort includes the conversion of the Tactical EA-6B Mission System (TEAMS) software to the Joint Mission Planning System (JMPS), including development of the EA-6B Unique Planning Module.											
A requirement exists to conduct an Analysis of Alternatives (AoA) for the Airborne Electronic Attack (AEA) aircraft, the replacement to the EA-6B. This weapon system, known as the AEA follow-on, will be required after the year 2015. In light of this OSD directed the Navy, with Army and Air Force participation and coordination, to prepare an AoA for airborne electronic warfare platforms and methods for use over the next two decades.											
A requirement exists to allow the EA-6B to participate in Network Centric Warfare. A method of implementing this requirement is to include the EA-6B on the Link-16 Network. Link-16 will allow the EA-6B to receive and send critical situational awareness and tactical data with other aircraft and the battle group. Funding provided via FY 2000 and FY 2001 Congressional additions, and via the PBD 113 in FY 2002.											
A requirement exists to demonstrate and develop Spray Cool Technology in the EA-6B aircraft. FY00 and FY01 Congressional Adds were provided for this purpose.											

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Exhibit R-2a, RDTE Budget Item Justification
(Exhibit R-2a, page 2 of 23)

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CLASSIFICATION:		
EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (7.854) Continued software/techniques and test support for ongoing new threat development and testing in ICAP II via the Jammer and Techniques Optimization (JATO) program. - (U) (71.386) Continued development of the Improved Capabilities III (ICAP III) system. Specifically, performed laboratory testing, systems design, development and fabrication. - (U) (4.000) Continued Engineering and Manufacturing Development (E&MD) of the Low Band Transmitter (LBT), three Antenna Set EDMs and five Amplifier Set EDM units. Conducted chamber demonstration of integrated amplifier/antenna performance. - (U) (29.230) Established basic EA-6B Link-16 capability to provide/receive situational awareness data as related to aircraft/strikegroup routing. - (U) (4.872) Demonstrated improved reliability and maintainability, and lower weight technology migration via the use of Spraycool vapor cooling technology on the EA-6B. - (U) (9.743) Initiated an Analysis of Alternatives for the follow-on airborne electronic attack system (AEA/AoA). - (U) (3.897) Continued development of a prototype for the GPS anti-jamming system (LOCO GPSI). Systems developed by SPAWAR. <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> - (U) (8.264) Continue software/techniques and test support for ongoing new threat development and testing in ICAP II via the Jammer and Techniques Optimization (JATO) program. - (U) (38.722) Continue development of ICAP III system. Specifically, complete development of EDM units, performed laboratory and flight testing, continued systems design, development and fabrication, and modified two development aircraft with new tactical jamming and display equipment. - (U) (3.962) Continue engineering, manufacturing development, and testing of LBT. Complete three Antenna Set EDMs and five Amplifier Set EDMs. - (U) (2.977) Continue Analysis of Alternatives (AoA) for the Airborne Electronic Attack (AEA) aircraft replacement for the EA-6B. - (U) (8.183) Continue demonstration and development of Spray Cool Technology in the EA-6B aircraft. - (U) (2.970) Continue development of a prototype for the GPS Antijamming System (LOCO GPS) Anti-Jamming. Systems developed by SPAWAR. - (U) (22.119) Complete full requirements definition. Continue to develop EA-6B Link-16 capability. - (U) (1.884) Portion of extramural program reserved for Small business Innovation Research assessment in accordance with 15 USC 68. 		

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Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2a, page 3 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS: Continued</p> <p>3. FY 2002 PLAN:</p> <ul style="list-style-type: none"> - (U) (9.000) Continue software/techniques and test support for ongoing new threat development and testing in ICAP II via the Jammer and Techniques Optimization (JATO) program. - (U) (56.304) Continue development of ICAP III system. Specifically, FY02 efforts will concentrate on completion of software development, Developmental and Operational Testing, and final integration of the hardware and software into the aircraft. - (U) (5.500) Continue engineering and manufacturing development, and testing of LBT. - (U) (3.000) Complete the Analysis of Alternatives (AoA) for the Airborne Electronic Attack (AEA) aircraft replacement for the EA-6B. - (U) (3.000) Update the baseline ICAP III system to include integration of many required avionics items such as the second Embedded GPS/INS (EGI), HARM VI, Precision Time Difference of Arrival, Low Band Transmitter, Band 7/8, Night Vision Devices (NVDs) and data fusion with national assets. Incorporation of these items will commence in FY-02. - (U) (8.000) Continue to develop Link-16 capability. Commence systems integration on Link-16. 		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME E0556 EW Counter Response																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: right;">FY2000</th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">135.061</td> <td style="text-align: right;">55.492</td> <td style="text-align: right;">33.365</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-4.079</td> <td style="text-align: right;">33.589</td> <td style="text-align: right;">51.455</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: right;">130.982</td> <td style="text-align: right;">89.081</td> <td style="text-align: right;">84.82</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding:</p> <p>The FY 2000 net decrease of \$4.079 million reflects a decrease of \$2.086 million for a Small Business Innovative Research (SBIR) assessment, a decrease of \$1.741 million for a reprioritization of requirements within the Navy, an increase of \$.278 million for Across-the-Board Reduction (net increase from PB01 submission), and a decrease of \$.530 million for a Congressional Reduction.</p> <p>The FY 2001 net increase of \$33.589 million reflects a decrease of \$.085 million for a reprioritization of requirements within the Navy, a decrease of \$.630 million for a Congressional Reduction, an increase of \$8.500 million for Spray Cooling Tech for EA-6B , an increase of \$3.0 million for location of GPS System Jammers, an increase of \$23.0 million for EA-6B Link-16 Connectivity and a decrease of \$.196 million for economic assumptions.</p> <p>The FY 2002 net increase of \$51.455 million reflects an increase of a \$38 million for ICAP III, an increase of \$5.5 million for Low Band Transmitter, a decrease of \$.322 million for a reprioritization of requirements within the Navy, an increase of \$8 million for EA-6B Link-16 integration into ICAP III, an increase of \$.103 million for economic assumptions, an increase of \$.158 million for a Federal Technology Transfer.</p> <p>(U) Schedule: ICAP III - Schedule changes due to program restructure agreed to 18 May 00 by ASN(RD&A). LBT - Schedule changes due to a program restructure approved via PEO(T) Acquisition Decision Memorandum of 11 September 00.</p>				FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	135.061	55.492	33.365	(U) Adjustments from the President's Budget:	-4.079	33.589	51.455	(U) FY 2002 President's Budget Submit:	130.982	89.081	84.82
	FY2000	FY2001	FY2002															
(U) FY 2001 President's Budget:	135.061	55.492	33.365															
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(U) FY 2002 President's Budget Submit:	130.982	89.081	84.82															

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001																							
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development			PROJECT NUMBER AND NAME E0556 EW Counter Response																									
<p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> <th style="text-align: right;">FY 2006</th> <th style="text-align: right;">FY 2007</th> <th style="text-align: right;">To Complete</th> <th style="text-align: right;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>P-1 #19 EA-6 Series Modifications</td> <td style="text-align: right;">255.88</td> <td style="text-align: right;">187.565</td> <td style="text-align: right;">137.645</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(U) D. ACQUISITION STRATEGY:</p> <ul style="list-style-type: none"> - The LBT development contract occurred following a full and open competition and was awarded to BAE Systems (formerly MARCONI). Following development and successful DT/OA, sole source LRIP contracts will be awarded in FY 2003. Following successful OT, a sole source production contract will be awarded in FY 2004. - The ICAP III contract, an E&MD CPIF/AF basic contract with two Fixed Price Incentive (FPI) production options, was awarded to a Northrop Grumman team in March 1998 following Milestone II and a full and open competition. The contract was changed to a CPAF contract in FY 1999. Milestone III and Full Rate Production are scheduled for FY 2003 with Initial Operating Capability to follow in FY 2005. 									<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	P-1 #19 EA-6 Series Modifications	255.88	187.565	137.645							
<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																				
P-1 #19 EA-6 Series Modifications	255.88	187.565	137.645																											

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(U) Program Milestones																						
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(U) T&E Milestones			2Q to 4Q ICAP III DT/OT 1Q to 4Q Low Band TX DT/OT																			
(U) Contract Milestones																						

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604270N Electronic Warfare Development			E0556 EW Counter Response						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	BAE Systems	24.210	3.962	10/00	3.500	10/01			0.737	32.409	32.409
		Lansdale, PA										
	C/CPAF	Northrop Grumman,	131.352	33.394	11/00	33.607	11/01			24.725	223.078	223.078
		Bethpage, NY										
Systems Engineering	WX	NRL, Wash. DC	6.856	0.991	10/00	1.437	10/01			Continuing	Continuing	
Systems Engineering	WX	NADEP, JAX	3.919	0.868	10/00	1.023	10/01			Continuing	Continuing	
Systems Engineering	WX	NSWC, CRANE	6.810	0.680	10/00	1.039	10/01			Continuing	Continuing	
Systems Engineering	WX	NAWCAD, PAX	10.419	2.912	10/00	4.025	10/01			Continuing	Continuing	
Systems Engineering	WX	NAWCAD, LKE	2.048	0.406	10/00	0.379	10/01			Continuing	Continuing	
Systems Engineering	WX	NAWCWD, PT MUGU	15.059	5.262	10/00	7.368	10/01			Continuing	Continuing	
Systems Engineering	Various	VARIOUS	43.063	1.252	11/00	1.431	11/01			Continuing	Continuing	
Award Fees	C/CPAF	Northrop Grumman,	2.474	1.250	05/01	8.000	05/02			4.500	16.224	16.224
		Bethpage, NY										
Miniaturization of ICAPIII Components	TBD	Various								28.341	28.341	28.341
Primary Hardware Development	TBD	Various				3.000	02/02			21.840	24.840	24.840
H/W Dev Enabling Tech	Various	Various								33.458	33.458	33.458
Mission Planning System Development	CPFF	Northrop Grumman								6.000	6.000	6.000
LOCO GPSI (E2422)	PD	SPAWAR	5.897	2.970	11/00					0.000	8.867	
EA-6B Connectivity/Link 16	Various	Various	29.230	19.084	05/01	8.000	01/02			0.000	56.314	
ICAP III Spray Cool Technology	CPFF	Isothermal Systems Research	4.872	8.189	06/01					0.000	13.061	
AEA Studies and AoA	Various	Various	9.743	2.977	11/00	2.995	11/00			0.000		
SBIR Assessment				1.884						0.000	1.884	
Subtotal Product Development			295.952	86.081		75.804				Continuing	Continuing	
Remarks: 1. The total cost figure for the BAES and the Northrop Grumman contracts are the Independent Government Estimate figures for total contract efforts less award fees, which are listed separately. The target value of contract figures are the total estimated cost of the awarded contracts less the award fees. 2. The Northrop Grumman ICAP III contract is a CPAF type. The Award Fee Period runs from March of one year until March of the following year; thus 6 months of the period is in one fiscal year (FY) and 6 months in the following FY. Legal and Comptroller rulings require that the Award Fee amount for any FY be prorated across the period. This requires setting aside/committing funding until midyear of the following FY. At that time, the award fee will be determined and the funding obligated and awarded. Year 1 award fee was 76% of the pool. 3. AEA Studies and AoA will be conducted based on guidance from USD (A&T) in coordination with the Army and Air Force.												

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604270N Electronic Warfare Development			E0556 EW Counter Response						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Development Support	SS/FP	JHU/APL, Colombia, MD	3.353	2.000	01/01	2.000	01/02					
Development Support	Various	MISC	12.009									
Subtotal Support			15.362	2.000		2.000						
Remarks:												
Developmental Testing	WX	NAWCAD, Pax		0.500	11/00	4.500	12/01					
Operational Test & Evaluation	WX	OPTEVFOR, Norfolk, VA	2.146	0.500	11/00	2.500	12/01					
Subtotal T&E			2.146	1.000		7.000						
Remarks: Funding is required to conduct ICAP III and LBT developmental/operational assessment planning, execution, and reporting. JHU/APL effort is expected to continue for the service life of the aircraft in support of the Jammer and Techniques Optimization (JATO) program.												
Total Cost			313.460	89.081		84.804						
Remarks: No Management Costs												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification								DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME E2175 TACAIR EW					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	318.491	74.575	41.869	25.635							
RDT&E Articles Qty	458	2	2								

*The FY 2001 budget reflects a \$3,000K Congressional add for Integrated Defensive Electronic Countermeasures (IDECM) executed under project E2635; which has been revised by \$28K for congressional undistributed adjustments.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: INTEGRATED DEFENSIVE ELECTRONIC COUNTERMEASURES (IDECM): This joint service subproject develops the new techniques generator and fiber optic towed decoy of the Radio Frequency Countermeasures (RFCM) Subsystem as well as the Navy-unique portions of the Common Missile Warning System (CMWS) and Advanced Strategic and Tactical Expendables (ASTE). It also integrates RFCM, CMWS and ASTE with Radar Warning Receiver (RWR), Countermeasures Dispensing Set (CMDS) and associated cockpit controls and displays to provide the lead aircraft (F/A-18E/F) with increased survivability against Infrared/Radio Frequency (IR/RF) threats.

(U) AN/ALR-67(V)3&4 RADAR WARNING RECEIVER: This subproject developed the system which provides enhanced situational awareness by providing accurate azimuth display of all programmed threats, independent of aircraft attitude. This also acted as Electronic Warfare (EW) Bus Controller.

(U) AN/ALE-50 ADVANCED AIRBORNE EXPENDABLE DECOY (AAED): This Joint Service (with Air Force) subproject is developing the system which will decoy enemy radio frequency homing missiles away from friendly aircraft.

(U) FLEET ELECTRONIC WARFARE SUPPORT GROUP (FEWSG): This subproject developed new EW equipment and technology which is used to provide realistic hostile EW threat environment, and support the evaluation and development of tactics and training.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:
 - (U) ((\$32.232) IDECM: Continued funding Engineering and Manufacturing Development (E&MD) contract for IDECM RFCM subsystem.
 - (U) (\$ 5.478) IDECM: Continued A-Kit design contract efforts for integration of the RFCM subsystem onto the F/A-18E/F and integration of CMWS/ASTE subsystems onto the AV-8B and F/A-18E/F.
 - (U) (\$36.865) IDECM: Continued engineering, technical and logistic support.
2. FY 2001 PLANS:
 - (U) (*\$19.733) IDECM: Continue funding Engineering and Manufacturing (E&MD) contract for IDECM RFCM subsystem . Includes the \$3.0M (Project E2635) Congressional add.
 - (U) (\$ 2.318) IDECM: Continue A-Kit design efforts for integration of the RFCM subsystem into the F/A-18E/F.
 - (U) (\$18.683) IDECM: Continue engineering, technical and logistic support.
 - (U) (\$1.135) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.
3. FY 2002 PLANS:
 - (U) (\$10.266) IDECM: Complete funding of engineering and manufacturing (E&MD) contract for IDECM RFCM subsystem.
 - (U) (\$.500) IDECM: Complete A-Kit design efforts for integration of the RFCM subsystem into the F/A-18 E/F.
 - (U) (\$14.864) IDECM: Continue engineering, technical and logistic support.

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Exhibit R-2a, RDTE Project Justification
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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA5	PROGRAM ELEMENT NUMBER AND NAME 0604270N ELECTRONIC WARFARE DEVELOPMENT	PROJECT NUMBER AND NAME E2175 TACAIR EW		

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	79.609	39.317	25.914
(U) Adjustments from the President's Budget:	-5.034	2.552	-0.279
(U) *FY 2002 President's Budget Submit:	74.575	41.869	25.635

*FY 2001 budget reflects a \$3,000K Congressional add for Integrated Defensive Electronic Countermeasures executed under E2635; which has been revised by \$28K for Congressional undistributed adjustments.

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 net decrease of \$5.034 million reflects a decrease of \$.059 million for a reprioritization of requirements within the Navy; a decrease of \$4.663 million for a Small Business Innovative Research (SBIR) assessment and a decrease of \$.312 million for a Congressional reduction. The FY 2001 net increase of \$2.552 million reflects a decrease of \$.145 million for reprioritization of requirements within the Navy; a decrease of \$.275 million for a Congressional reduction; a \$3.000 million Congressional add for IDECM, project E2635 which has been revised by a decrease of \$.021 million for a Congressional reduction and a decrease of \$.007 million for a reprioritization of requirements within the navy. The FY 2002 net decrease of \$.279 million reflects a reprioritization of requirements within the Navy.

(U) Schedule: RFCM OT-11A(OA) moved from 1Q/00 to 2Q/00. IDECM DT-IIA moved from 1Q/99-3Q/00 to 1Q/99-2Q/00 and was redesignated as IDECM DT-IIB. RFCM DT IIC/ DT Assist 3Q/00-4Q/00 has been added. IDECM DT-IIC has been redesignated to IDECM DT-IIID. IDECM DT-IIID has been redesignated as IDECM DT-IIIE. The above testing dates were rescheduled as a result of the Acquisition Program Baseline dated 31 MAY00. RFCM LRIP changed from 1Q/01 to LRIP I RFCM 2Q/01. Contract was delayed due to prolonged contract negotiations. RFCM LRIP II 1Q/02 and FRP 1Q/03 has been added. These changes were due to program production funding reductions. Change approved by ASN(RDA) NOV00. RFCM MS III moved from 2Q/02 to 3Q/02. IDECM DT IIE moved from 4Q/02-2Q/03 to 4Q/04-1Q/05. IDECM Opeval RFCM FOT&E moved from 2Q/03-3Q/03 to 1Q/05-2Q/05. IDECM MS III moved from 4Q/03 to 2Q/05. These schedule changes are due to delays in the CMWS program and the recommended termination of NAVY TACAIR participation in the CMWS program. The dates indicated are the program office estimates based on the current status of the CMWS program. due to delays in the CMWS program and the recommended termination of Navy TACAIR participation in the CMWS program. The dates indicated are estimates of the program office based upon the current status of the CMWS program.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
APN Line 46-IDECM	0	0	0							

Related RDT&E:

(U) P.E. 0604270N (ELECTRONIC WARFARE DEVELOPMENT)

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EXHIBIT R-2a, RDT&E Project Justification		DATE:	June 2001																												
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																													
RDT&E, N / BA-5	0604270N ELECTRONIC WARFARE DEVELOPMENT	E2175 TACAIR EW																													
<p>(U) D. ACQUISITION STRATEGY: IDECM- Sole source LRIP I contract (FY01), LRIP II contract (FY02), sole source FRP (FY03) contract with one option (FY04); full and open competition FRP contract with options (FY05 and beyond)</p> <p>(U) E. SCHEDULE PROFILE:</p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td>2Q/01 RFCM LRIP I</td> <td>1Q/02 RFCM LRIP II</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td></td> <td>3Q/02 RFCM MS III</td> </tr> <tr> <td>(U) T&E Milestones</td> <td>2Q/00 RFCM OT-IIA(OA)</td> <td>1Q/01-4Q/01 IDECM DT-IID 4Q/01-2Q/02 RFCM OT-IIA OPEVAL</td> <td></td> </tr> <tr> <td></td> <td>1Q/99-2Q/00 IDECM DT IIB</td> <td></td> <td></td> </tr> <tr> <td></td> <td>3Q/00-4Q/00 RFCM DT IIC/ DT Assist</td> <td></td> <td></td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	(U) Program Milestones		2Q/01 RFCM LRIP I	1Q/02 RFCM LRIP II	(U) Engineering Milestones			3Q/02 RFCM MS III	(U) T&E Milestones	2Q/00 RFCM OT-IIA(OA)	1Q/01-4Q/01 IDECM DT-IID 4Q/01-2Q/02 RFCM OT-IIA OPEVAL			1Q/99-2Q/00 IDECM DT IIB				3Q/00-4Q/00 RFCM DT IIC/ DT Assist			(U) Contract Milestones			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																												
(U) Program Milestones		2Q/01 RFCM LRIP I	1Q/02 RFCM LRIP II																												
(U) Engineering Milestones			3Q/02 RFCM MS III																												
(U) T&E Milestones	2Q/00 RFCM OT-IIA(OA)	1Q/01-4Q/01 IDECM DT-IID 4Q/01-2Q/02 RFCM OT-IIA OPEVAL																													
	1Q/99-2Q/00 IDECM DT IIB																														
	3Q/00-4Q/00 RFCM DT IIC/ DT Assist																														
(U) Contract Milestones																															

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME E2175 TACAIR EW					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
ENGINEERING/LOGISTIC/SPT	WX/RX	NAWC-AD/PAX	22.001	0.768	11/00	0.865	11/01				23.634	
ENGINEERINGTECH DATA	WX/RX	NAWC-WD, CA	21.334	5.895	11/00	4.000	11/01				31.229	
Miscellaneous (efforts < \$m each)	WX/RX	Various	0.860	1.027	11/00	0.867	11/01				2.754	
Subtotal T&E			44.195	7.690		5.732				0.000	57.617	
Remarks:												
Program Management Support	WX/RX	NAWC-AD/PAX/Various	19.684	1.070	11/00	0.925	11/01				21.679	
Miscellaneous (efforts < \$m each)	WX/RX	Various	7.252	0.104	11/00	0.968	11/01				8.324	
SBIR Assessment				1.135								
Subtotal Management			26.936	2.309		1.893				0.000	31.138	
Remarks:												
Total Cost			393.066	41.869		25.630				0.000	460.565	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
RDT&E, N / BA-5		0604270N Electronic Warfare Development					R2260 Specific Emitter ID				
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		1.740	1.513	1.012	1.020	1.022	1.023	1.024	1.025	Continuing	Continuing
RDT&E Articles Qty	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports systems development and collection of Specific Emitter Identification (SEI) information from National Technical Means (NTM) to track commercial ships over 200 gross registered tons world-wide. Research and development will cover improvements and enhancements to Electronic Intelligence technology. This will include improved/next generation SEI technology for miniaturization and automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. Propagation in a multi-path signal environment will also be assessed. All work on this project will be undertaken in pursuit of goals stated by the Office of Naval Intelligence and the National Security Agency in support of the Worldwide Ship Tracking Program.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$.570) Developed more noise-robust algorithms, increasing SEI resolution and precision. Demonstrated remote sensor operation for placement at inhospitable/inaccessible sites. - (U) (\$.540) Developed a miniaturized and cost-reduced SEI processor was completed with the acceptance of the item from the contractor. - (U) (\$.630) Developed and installed new software in response to Y2K issues for operational systems, while improving capabilities to detect and identify LPI radars. <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$.400) SEI technology will be extended to address intentionally modulated and other complex waveform threats. - (U) (\$.600) Miniaturized SEI technology will be finalized for transition in tactical platforms and national-technical-means. - (U) (\$.512) The development and demonstration of an integrated and remotely operated surveillance system will be accelerated. - (U) (\$.001) Portion of extramural program reserved for Small business Innovation Research assessment in accordance with 15 USC 638. <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$1.012) Work will focus on increased sensor fusion and automation to reduce staffing and support remote access and control capability. 											

R-1 SHOPPING LIST - Item No. 109

UNCLASSIFIED

Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 15 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N Electronic Warfare Development	PROJECT NUMBER AND NAME R2260 Specific Emitter ID																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table> <thead> <tr> <th></th> <th>FY2000</th> <th>FY2001</th> <th>FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td>1.801</td> <td>1.527</td> <td>1.577</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td>-0.061</td> <td>-0.014</td> <td>-0.565</td> </tr> <tr> <td>(U) FY 2002 President's Budget Budget Submit:</td> <td>1.74</td> <td>1.513</td> <td>1.012</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding:</p> <p>The FY 2000 net decrease of \$.061 million consists of a \$.007 million proportionate reduction and decrease of \$.036 million FY2000 actuals and \$.018 for SBIR.</p> <p>The FY 2001 net decrease of \$.014 million consists of a \$.011 million decrease for .7% pro-rata reduction and \$.003 million government-wide rescission.</p> <p>The FY 2002 net decrease of \$.565 million consists of a \$.577 million decrease for realignment and a decrease of \$.001 million for a final POM 02 balance, \$.002 million increase NWCF (NRL), \$.014 million NWCF rate adjustment and \$.001 million Non-Pay Inflation adjustment.</p> <p>(U) Schedule: Not Applicable</p> <p>(U) Technical: Not Applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable</p> <p>(U) D. ACQUISITION STRATEGY: This is a Engineering Development Program.</p> <p>(U) E. SCHEDULE PROFILE: Not Applicable</p>				FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	1.801	1.527	1.577	(U) Adjustments from the President's Budget:	-0.061	-0.014	-0.565	(U) FY 2002 President's Budget Budget Submit:	1.74	1.513	1.012
	FY2000	FY2001	FY2002															
(U) FY 2001 President's Budget:	1.801	1.527	1.577															
(U) Adjustments from the President's Budget:	-0.061	-0.014	-0.565															
(U) FY 2002 President's Budget Budget Submit:	1.74	1.513	1.012															

R-1 SHOPPING LIST - Item No. 109

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE&E, N / BA-5			0604270N Electronic Warfare Development			R2260 Specific Emitter ID						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/FFP	ITT, Virginia		0.400	02/01	0.200	02/01			0.350	0.950	0.950
Software Development	WR	NRL, Washington, DC		0.300		0.200				Continuing	Continuing	
Government Engineering Support	WR	NRL, Washington, DC		0.150		0.100				Continuing	Continuing	
Contractor Engineering Support	C/FFP	AIMS, Maryland		0.150	03/01	0.150	03/01			0.300	0.600	0.600
Subtotal Product Development			0.000	1.000		0.650				Continuing	Continuing	
Remarks:												
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 17 of 23)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)							DATE: June 2001						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604270N Electronic Warfare Development			R2260 Specific Emitter ID							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation	WR	NRL, Washington, DC		0.289		0.164							
Developmental Test & Evaluation	C/FFP	CACI, Virginia		0.150	03/01	0.150	03/01						
Subtotal T&E			0.000	0.439		0.314							
Remarks:													
Program Management	WR	NRL, Washington, DC		0.074		0.048							
Subtotal Management			0.000	0.074		0.048							
Remarks:													
Total Cost			0.000	1.513		1.012							
Remarks:													

R-1 SHOPPING LIST - Item No. 109

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 18 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5		0604270N Electronic Warfare Development				Z1742 EW TECHNICAL DEVELOPMENT AND TEST					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		0.866	0.936	1.006							
RDT&E Articles Qty	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>Skunkworks is a CNO N64 funded effort that focuses on the quick reaction prototyping of tactical information warfare systems. This program directly addresses various fleet requirements, airborne and surface cryptologic operational requirements documents and the joint requirements oversight council mission needs statement for information warfare (IW) systems and capabilities across the spectrum of conflict. The projects developed under this program are designed to deny, degrade, disrupt or destroy enemy command and control communications. These systems provide information dominance to friendly forces during conflict which is necessary for success.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$.250) Began development and installation of FURY command and control emulation network at NSAFC Fallon. - (U) (\$.400) Developed and tested heliborne IW system on an MH-60 helicopter in response to JSOC requirements. - (U) (\$.119) Began development of airborne IW pod for patrol aircraft. - (U) (\$.097) Began engineering and development of unmanned aerial vehicle IW payload. <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$.275) Final integration of airborne IW pod. - (U) (\$.300) Continue heliborne IW jammer test support and follow-on development. - (U) (\$.100) Continue FURY development and support. - (U) (\$.200) Continue unmanned aerial vehicle IW payload development. - (U) (\$.061) Begin concept exploration of high performance aircraft pod. <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$.300) Airborne IW pod test and certification. - (U) (\$.400) Continue heliborne jammer development. - (U) (\$.200) Continue unmanned aerial vehicle IW payload development. - (U) (\$.106) Continue high performance aircraft (HPA) IW pod design. 											

R-1 SHOPPING LIST - Item No. 109

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 19 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:																
		June 2001																
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																
RDT&E, N / BA-5	0604270N Electronic Warfare Development	Z1742 EW TECHNICAL DEVELOPMENT AND TEST																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table><thead><tr><th></th><th><u>FY2000</u></th><th><u>FY2001</u></th><th><u>FY2002</u></th></tr></thead><tbody><tr><td>(U) FY 2001 President's Budget:</td><td>0.891</td><td>0.945</td><td>1.005</td></tr><tr><td>(U) Adjustments from the President's Budget:</td><td>-0.025</td><td>-0.009</td><td>0.001</td></tr><tr><td>(U) FY 2002 President's Budget Submit:</td><td>0.866</td><td>0.936</td><td>1.006</td></tr></tbody></table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net decrease of .025 reflects a decrease of .022 for a Small Business Innovative Research assessment and a decrease of .003 for a Congressional Recission. The FY 2001 decrease of .009 is for a Congressional reduction. The FY 2002 net increase of .001 reflects a non-pay adjustment.</p> <p>(U) Schedule: N/A</p> <p>(U) Technical: N/A</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: N/A</p>				<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	(U) FY 2001 President's Budget:	0.891	0.945	1.005	(U) Adjustments from the President's Budget:	-0.025	-0.009	0.001	(U) FY 2002 President's Budget Submit:	0.866	0.936	1.006
	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>															
(U) FY 2001 President's Budget:	0.891	0.945	1.005															
(U) Adjustments from the President's Budget:	-0.025	-0.009	0.001															
(U) FY 2002 President's Budget Submit:	0.866	0.936	1.006															

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604270N Electronic Warfare Development		Z1742 EW TECHNICAL DEVELOPMENT AND TEST	
(U) D. ACQUISITION STRATEGY: N/A				
(U) E. SCHEDULE PROFILE:				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>
(U) Engineering Milestones	FURY	FURY Upgrade HELIBORNE Jammer HPA IW POD Airborne Antennas	UAV Payload HPA IW POD Portable Jammer	Multit-Functional Jammer
(U) T&E Milestones	HELIBORNE RUBICON FURY Test	UAV IW Payload Test	Airborne Antenna FURY Upgrade	HPA IW POD Portable Airborne Jammer UAV Payload Test
(U) Contract Milestones				

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 21 of 23)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA 5			0604270N Electronic Warfare Development			Z1742 EW TECHNICAL DEVELOPMENT AND TEST						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development			0.266	0.286		0.400						
Subtotal Product Development			0.266	0.286		0.400						
Remarks:												
Software Development			0.100	0.150		0.156						
Subtotal Support			0.100	0.150		0.156						
Remarks:												

R-1 SHOPPING LIST - Item No. 109

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 22 of 23)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME Z1742 EW TECHNICAL DEVELOPMENT AND TEST						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation			0.250	0.250		0.200							
Subtotal T&E			0.250	0.250		0.200							
Remarks:													
Contractor Engineering Support			0.100	0.100		0.100							
Government Engineering Support			0.100	0.100		0.100							
Travel			0.050	0.050		0.050							
Subtotal Management			0.250	0.250		0.250							
Remarks:													
Total Cost			0.866	0.936		1.006		0.000					
Remarks:													

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UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 23 of 23)

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
APPROPRIATION/BUDGET ACTIVITY							R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5							SC-21 Total Ship Systems Engineering/0604300N			
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Total PE Cost	160.894	289.591	355.093							
	(2)		(3)							
DD 21 Sys Des, Dev & Int ¹ /32464	113.508	153.500	234.464							
			(4)							
DC/Survivability/32465	2.997	6.260	0.000							
Multi-Function Radar (MFR)/32466	44.389	72.901	73.262							
	(5)									
Volume Search Radar (VSR)/32735	0.000	56.930	47.367							
Quantity of RDT&E Articles	0	0	**2/TBD							
<p>Notes: (1) DD 21 Systems Design, Development, and Integration. Project formerly known as Design.</p> <p>(2) (U) Contains \$3.300M to off-set VSR development requirement.</p> <p>(3) (U) Funding for efforts directly related to DD 21 design and systems integration has been reprogrammed to this project from PE 0603513N, Projects 32469 and 32470 and PE 0604300N, Project 32465 in FY 2002 and out.</p> <p>(4) Funding for this project has been reprogrammed to PE 0603513N in FY 2002 and out.</p> <p>(5) (U) FY00 funding for VSR development is included in PE 0603512N, Project 42208 (Future Carrier R&D) and PE 0604755N, Project 32735 (Ship Self Defense). All requirements in FY 2001 and beyond are consolidated in PE 0604300N, Project 32735.</p> <p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (PE) provides funds for development of the DD 21 Class of U. S. Navy surface combatants and advanced development R&D which is integral to DD 21. The mission of the DD 21 class is to provide affordable and credible independent forward presence/deterrence and operate as an integral part of Naval, Joint or Combined Maritime Forces. DD 21 will provide advanced land attack capability in support of the ground campaign and contribute to Naval, Joint or Combined battlespace dominance in littoral operations. DD 21 will establish and maintain surface and sub-surface superiority, provide local air defense, and incorporate signature reduction to operate in all threat environments. DD 21 will have seamless Joint Interoperability to integrate all source information for battlespace awareness and weapons direction.</p> <p>* *(U) For explanation of Test Articles, see Projects 32466 and 32735.</p>										

R-1 SHOPPING LIST - Item No. 110-1 of 110-24

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 24)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001																				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE SC-21 Total Ship Systems Engineering/0604300N																					
<p>B. (U) PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;"></th> <th style="width: 15%; text-align: center; border-bottom: 1px solid black;">FY 2000</th> <th style="width: 15%; text-align: center; border-bottom: 1px solid black;">FY 2001</th> <th style="width: 15%; text-align: center; border-bottom: 1px solid black;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">161.118</td> <td style="text-align: right;">305.274</td> <td style="text-align: right;">303.989</td> </tr> <tr> <td>(U) Appropriated Value:</td> <td style="text-align: right;">162.056</td> <td style="text-align: right;">292.274</td> <td></td> </tr> <tr> <td>(U) Adjustment to FY 2000/2001 Appropriated Value/ FY 2001 President's Budget:</td> <td style="text-align: right;">-0.224</td> <td style="text-align: right;">-15.683</td> <td style="text-align: right;">+51.104</td> </tr> <tr> <td>(U) FY 2002 PRES Budget Submit:</td> <td style="text-align: right;">160.894</td> <td style="text-align: right;">289.591</td> <td style="text-align: right;">355.093</td> </tr> </tbody> </table> <p>(U) Funding: The FY 2000 net decrease of \$0.224M is due to Small Business Innovative Research (SBIR) reductions (-\$3.210M), realignment of funds from PE 0603513N to fund a VSR shortfall (+\$2.213M), Below Threshold Reprogrammings (-\$0.250M), Federal Technology Transfer Assessment (-\$0.021), Congressional Rescission (-\$0.632M) and miscellaneous adjustments (+\$1.676M). The FY 2001 net decrease of \$15.683M is due to a Congressional reduction for design cost growth (-\$20.000M), Congressional increases for Power Node Control Centers (PNCC) (+\$3.000M) and Multi-Function Radar (+\$4.000M), Economic Assumption Reduction (-\$2.045M) and Congressional Rescission (-\$0.638M). The FY 2002 net increase of \$51.104M is due to to program element/project funding realignments within the DD21 program (+\$29.461M), PBD 807 MFR increase (+\$21.000M), NWCF Rate adjustments (-\$0.547M), Non-Pay Inflation adjustments-PBD604 (+\$.518M) and miscellaneous minor adjustments (+\$.672M).</p> <p>(U) Schedule: See individual projects</p> <p>(U) Technical Parameters: Technical parameters are contained in the DD 21 Operational Requirements Document (ORD) approved by JROC on 16 October 1997.</p>				FY 2000	FY 2001	FY 2002	(U) FY 2001 President's Budget:	161.118	305.274	303.989	(U) Appropriated Value:	162.056	292.274		(U) Adjustment to FY 2000/2001 Appropriated Value/ FY 2001 President's Budget:	-0.224	-15.683	+51.104	(U) FY 2002 PRES Budget Submit:	160.894	289.591	355.093
	FY 2000	FY 2001	FY 2002																			
(U) FY 2001 President's Budget:	161.118	305.274	303.989																			
(U) Appropriated Value:	162.056	292.274																				
(U) Adjustment to FY 2000/2001 Appropriated Value/ FY 2001 President's Budget:	-0.224	-15.683	+51.104																			
(U) FY 2002 PRES Budget Submit:	160.894	289.591	355.093																			

R-1 SHOPPING LIST - Item No. 110-2 of 110-24

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 2 of 24)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification					DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER				
RDT&E, N/BA-5		SC-21 Total Ship Systems Eng/0604300N			DD 21 System Design, Development & Integration ¹ /32464				
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002					
Project Cost		113.508	153.500	(1) 234.464					
RDT&E Articles Qty		0	0	0					
<p>Notes: (1) Project formerly known as Design.</p> <p>(2) (U) Funding for efforts directly related to DD 21 design and systems integration has been reprogrammed to this project from PE 0603513N, Projects 32469 and 32470 and PE 0604300N, Project 32465 in FY 2002 and out.</p> <p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project encompasses efforts for the total ship system engineering development and integration of Hull, Mechanical and Electrical (HM&E), communications, electronics, command and control, combat, weapons and shipboard systems into the DD 21 class. These engineering development and integration efforts include systems engineering, analysis, software development, interface design, technical documentation, and system/subsystem testing to ensure fully functional systems integration. These systems engineering development efforts are required to ensure that DD 21 is a totally integrated ship system, delivering required warfighting technologies to the fleet within the reduced manning and cost goals.</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$70.250) Began Contract Phase II for the development of two competitive initial system designs for DD 21. DD 21 industry teams continued development of the system functional baseline, continued refinement of the performance specification, continued to develop and validate cost estimates, and continued to develop a detailed total ship design leading to a Preliminary Design Review (PDR). Continued development of the Smart Product Model virtual prototype, which constitutes a representation of the ship's requirements, design and capabilities at the preliminary design level. Conducted System Functional Review (SFR). - (U) (\$29.363) Continued to support the DD 21 Technical Team responsible for the participation, oversight and monitoring of the two industry designs in Contract Phase II. Evaluated contractor deliverables and conducted Engineering Review in preparation for downselect and Preliminary Design Review (PDR) in FY 2001. The Engineering team consists of Government Labs, Universities and selected technical support contractors. This Technical Team provides the expertise to evaluate/support the DD 21 industry design in the areas of Combat Systems; HM&E; Signatures; Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR); Modeling and Simulation; Total Ship Computing; Test and Evaluation; Manning, and Life Cycle Engineering and Support (LCE&S). - (U) (\$5.230) Continued development of DD 21 Live Fire Test and Evaluation (LFT&E) Plan. The DD 21 LFT&E program focuses on the following areas: Mission Recoverability, Magazine Protection, Damaged Seaway Survival, Selected Equipment Vulnerability, and Advanced Weapon Threat Effects. These areas address critical elements of DD 21 survivability as defined in the Test and Evaluation Master Plan (TEMP), the LFT&E Management Plan, and the Operational Requirements Document (ORD). Test results were used to improve modeling and simulation capability and will support DD 21 design evaluations. 									

R-1 SHOPPING LIST - Item No. 110-3 of 110-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 3 of 24)

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N	PROJECT NAME AND NUMBER DD 21 System Design, Development & Integration/32464
<p>1. (U) FY 2000 ACCOMPLISHMENTS (continued):</p> <ul style="list-style-type: none"> - (U) (\$6.584) Continued identification and risk mitigation efforts in high risk areas such as manning, LCE&S, Total Ship Computing, and certification. Continued Manning/Human Systems Interface (HSI) and LCE&S IPTs to address the impact of how industry-developed concepts will impact the future Navy support infrastructure in these functional areas. Reviewed and developed proposed policy changes as a result of DD 21 industry concepts that impact Navy manning and life cycle support structure as a result of FSC proposals. - (U) (\$2.081) Developed the baseline architecture to support the introduction of time critical strike future naval capability and the system and technical architectures that describe physical, functional and organizational relationships between all operating units and systems in the Surface Combatant Land Attack programs of record. <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$104.519) Complete Initial System Design (Contract Phase II). Complete initial development of Smart Product Model virtual prototype for contract Phase II. Downselect to one DD 21 Industry team to begin system and subsystem design. Begin DD 21 Ship System Design (Contract Phase III). This includes development of the total ship computing architecture and computer programs that will integrate Combat Systems to support reduced Navy manning and improved LCE&S concepts, HM&E, and administrative functions. Conduct Preliminary Design Review (PDR). Continue development of Smart Product Model virtual prototype to support contract and detailed design of DD 21. - (U) (\$33.068) Continue support of DD 21 Technical Team responsible for the participation, oversight and monitoring of the two industry designs during Contract Phase II and following downselect to one DD 21 industry team. Participate in/evaluate SFR, downselect, and PDR. The Engineering team consists of Government Labs, Universities and selected technical support contractors. The Technical Team provides the expertise to evaluate/support the DD 21 industry design in the areas of Combat Systems, HM&E, Signatures, C4ISR, Modeling and Simulation, Total Ship Computing, Test and Evaluation, Manning, and LCE&S. - (U) (\$5.980) Continue development of DD 21 LFT&E plan. The DD 21 LFT&E program focuses on the following areas: Mission Recoverability, Magazine Protection, Damaged Seaway Survival, Selected Equipment Vulnerability, and Advanced Weapon Threat Effects. These areas address critical elements of DD 21 survivability as defined in the Test and Evaluation Master Plan (TEMP), the LFT&E Management Plan, and the Operational Requirements Document (ORD). Test results will be used to improve modeling and simulation capability and will support DD 21 design evaluations. - (U) (\$6.841) Continue identification and risk mitigation efforts in high risk areas such as manning, LCE&S, and Total Ship Computing. Continue Manning/HSI and LCE&S IPTs to address the impact of how industry-developed concepts will impact the future Navy support infrastructure in these functional areas. Review and develop proposed policy changes as a result of DD 21 industry concepts that impact Navy manning and life cycle support structure as a result of FSC proposals. - (U) (\$3.092) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 		

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N	PROJECT NAME AND NUMBER DD 21 System Design, Development & Integration/32464
<p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none">- (U) (\$180.162) Continue DD 21 System Design (Contract Phase III). This includes system and subsystem development of the HM&E, C4ISR, total ship computing and software development, modeling and simulation (including Smart Product Model), and planning, development, and implementation of the life cycle support and engineering concepts. Contract Phase III also includes the planning and development of the test and evaluation infrastructure required for the first DD 21 ship.- (U) (\$36.990) Continue support of DD 21 Technical Team. The Technical Team provides the expertise to evaluate/support the DD 21 industry design in the areas of Combat Systems, HM&E, C4ISR, Modeling and Simulation, Total Ship Computing, and Test and Evaluation. Establish team to review and certify Full Service Contractor (FSC) software development.- (U) (\$6.438) Continue development of the DD 21 LFT&E plan. The DD 21 LFT&E program focuses on the following areas: Mission Recoverability, Magazine Protection, Damaged Seaway Survival, Selected Equipment Vulnerability, and Advanced Weapons Threat Effects. These areas address critical elements of DD 21 survivability as defined in the Test and Evaluation Master Plan (TEMP), the LFT&E Management Plan, and the Operational Requirements Document (ORD). Conduct a Live Fire event using a supersonic threat missile against a ship target with some portion of distributed shipboard systems such as firemain or electrical system intact and operating on the target ship.- (U) (\$10.874) Continue identification and risk mitigation efforts in high risk areas such as manning, LCE&S, and Total Ship Computing. Continue Manning/HSI and LCE&S IPTs to address the impact of how industry-developed concepts will impact the future Navy support infrastructure in these functional areas. Review and develop proposed policy changes as a result of DD 21 industry concepts that impact Navy manning and life cycle support structure as a result of FSC proposals.		

R-1 SHOPPING LIST - Item No. 110-5 of 110-24

Exhibit R-2a, RDT&E Project Justification
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER DD 21 System Design, Development & Integration/32464				
B. (U) OTHER PROGRAM FUNDING SUMMARY:										
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002						
Shipboard System Component Dev/0603513N		108.548	256.065	288.382						
C. (U) ACQUISITION STRATEGY: (U) The DD 21 acquisition strategy encompasses five contract phases: Phase I – System Concepts, Phase II – Initial System Design, Phase III – System Design, Phase IV – Detail Design and Construction, and Phase V – Engineering and Logistics Life Cycle Support. The Navy awarded section 845/804 agreements for Phases I and II for two DD 21 Industry teams. Downselection to a single DD 21 Contractor team will occur in mid FY 2001 to begin Contract Phase III.										

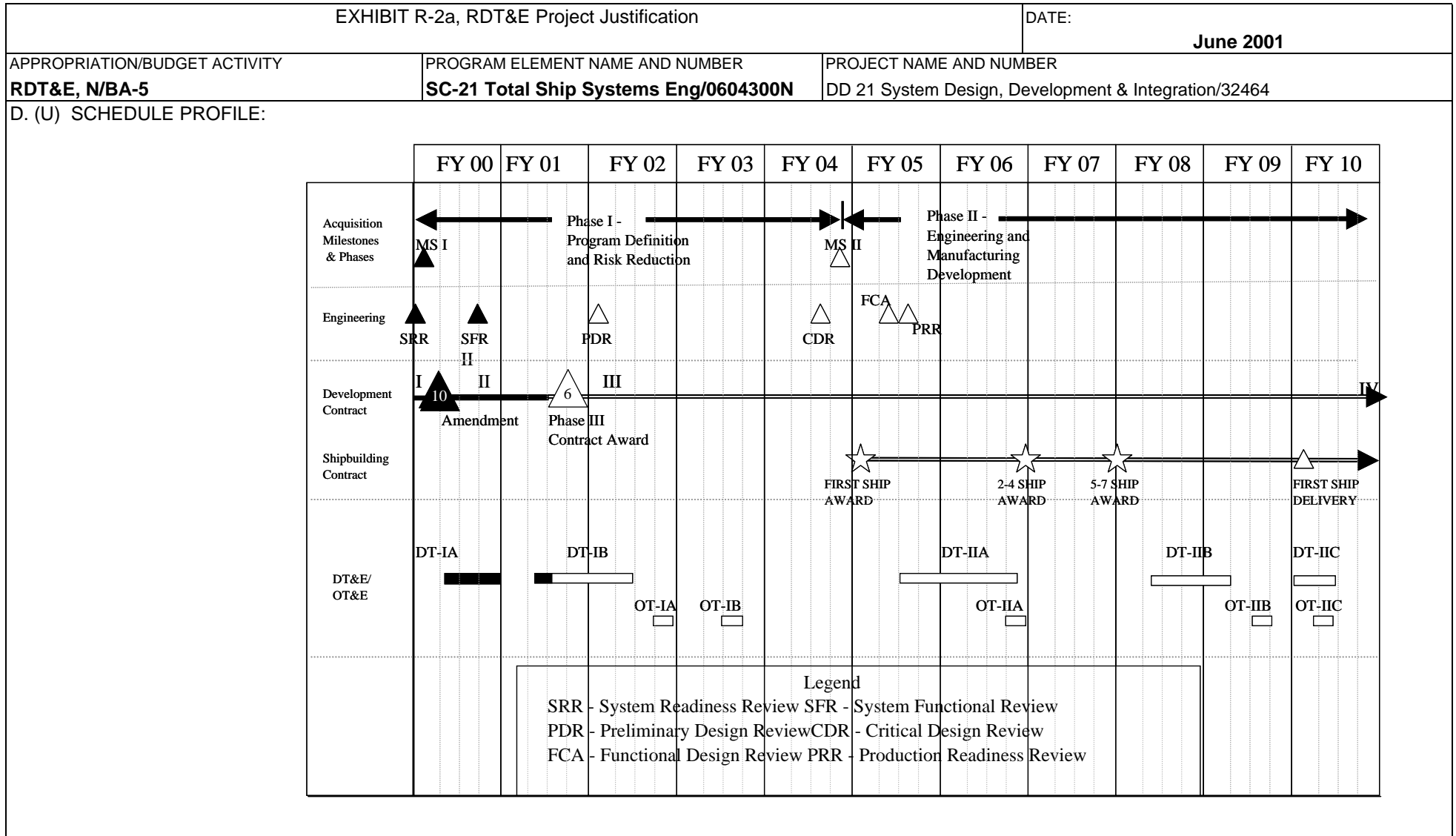
R-1 SHOPPING LIST - Item No. 110-6 of 110-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 6 of 24)

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R-1 SHOPPING LIST - Item No. 110-7 of 110-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 7 of 24)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SC-21 Total Ship System Engin/0604300N			DD 21 System Design, Development & Integration/32464						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Initial System Concepts - Phase I	Sec 845/804	DD 21 Industry Team	54.800	0.000	N/A	0.000	N/A	0.000	N/A	0.000	54.800	
Initial System Design/System, Subsystem Design - Phases II & III	Sec 845/804	DD 21 Industry Team	0.000	70.250	11/99	64.019	10/00	0.000	N/A	0.000	134.269	
Primary H/W Development - Phase III	CPIF	DD 21 FSC	0.000	0.000	N/A	40.500	06/01	180.162	11/01	CONT.	CONT.	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Subtotal Product Development			54.800	70.250		104.519		180.162		CONT.	CONT.	
Remarks: Funding for the DD 21 industry team for efforts directly related to DD 21 design and systems integration has been reprogrammed to this project from PE 0603513N, Projects 32469 and 32470 and from PE 0604300N, Project 32465 in FY 2002 and out.												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks: (U) Support costs during this period are rolled up in development contracts costs.												

R-1 SHOPPING LIST - Item No. 110-8 of 110-24

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 24)

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Exhibit R-3 Cost Analysis (page 2)								DATE:									
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT					PROJECT NAME AND NUMBER				
RDT&E, N/BA-5								SC-21 Total Ship System Engin/0604300N					DD 21 System Design, Development & Integration/32464				
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract					
Live Fire Test & Evaluation	Sec 845/804	DD 21 Industry Teams	2.425	1.750	11/99	0.000	N/A	0.000	N/A	0.000	4.175						
	CPIF	DD 21 FSC	0.000	0.000	N/A	2.450	10/00	2.100	11/01	CONT.	CONT.						
	WR	NSWC CD Bethesda, MD	6.832	3.180	12/99	3.530	11/00	3.000	11/01	CONT.	CONT.						
	WR	NSWC DD Dahlgren, VA	0.200	0.000	N/A	0.000	11/00	0.500	11/01	CONT.	CONT.						
	Various	Various	2.369	0.300	Various	0.000	N/A	0.838	11/01	CONT.	CONT.						
Subtotal T&E			11.826	5.230		5.980		6.438		CONT.	CONT.						
Remarks:																	
Contractor Engineering Support	GSA	Anteon Arlington,VA	3.300	1.500	12/99	1.500	11/00	2.300	11/01	CONT.	CONT.						
	GSA	BAE Systems, Rockville, MD	2.000	1.000	12/99	0.000	N/A	0.000	N/A	CONT.	CONT.						
	GSA	GRCI, Falls Church, VA	0.000	0.000	N/A	1.500	11/00	1.500	11/01	CONT.	CONT.						
	Misc.	Various	1.800	1.427	12/99	1.800	11/00	1.600	11/01	CONT.	CONT.						
Government Engineering Support	WR	NSWC DD Dahlgren, VA	24.790	11.353	12/99	13.679	11/00	17.010	11/01	CONT.	CONT.						
	WR	NSWC CD Bethesda, MD	7.080	2.959	12/99	7.800	11/00	7.809	11/01	CONT.	CONT.						
	WR	NSWC CR Crane, IN	2.757	0.631	12/99	0.635	11/00	0.659	11/01	CONT.	CONT.						
	WR	NSWC PHD Pt Hueneme,CA	1.870	2.415	12/99	1.615	11/00	1.815	11/01	CONT.	CONT.						
	WR	SSCSD San Diego, CA	2.640	2.170	12/99	2.071	11/00	1.900	11/01	CONT.	CONT.						
	WR	NUWC/N Newport, RI	2.005	1.206	12/99	0.850	11/00	0.880	11/01	CONT.	CONT.						
	WR	NSWC/PC Panama City, FL	0.000	1.014	12/99	1.000	11/00	0.910	11/01	CONT.	CONT.						
	Various	Gov't Activities	6.680	4.698	12/99	3.034	11/00	2.502	11/01	CONT.	CONT.						
University Research	CPFF	APL/JHU Laurel, MD	4.072	2.722	12/99	2.700	11/00	3.500	11/01	CONT.	CONT.						
Program Management Support	Various	Various	7.271	3.533	12/99	3.417	11/00	3.729	11/01	CONT.	CONT.						
Travel	Various	Various	0.762	1.400	Various	1.400	Various	1.750	11/01	CONT.	CONT.						
Subtotal Management			67.027	38.028		43.001		47.864		CONT.	CONT.						
Remarks:																	
Total Cost			133.653	113.508		153.500		234.464		CONT.	CONT.						
Remarks:																	

R-1 SHOPPING LIST - Item No. 110-9 of 110-24

Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER DC/Survivability/32465					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002						
Project Cost		2.997	6.260	(1) 0.000						
RDT&E Articles Qty		0	0	0						

Notes: (1) (U) Funding for this project has been reprogrammed to PE 0603513N, Project 32465 in FY 2002 and out.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project funds the engineering development of DD 21 ship protection and damage control/firefighting systems and features that reduce vulnerability against conventional weapons (e.g., missiles, mines, torpedoes) and peacetime accidents that enable an effective recovery of mission capability. The requirements for this project are based on the need to develop affordable, balanced DD 21 survivability designs that address recent wartime lessons learned and meet established DD 21 survivability goals.

(U) Additionally, this project addresses survivability requirements applicable to the existing fleet and other ship acquisition programs (e.g., LPD 17, CVX, LHX). Development areas include: 1) computer-based damage control systems that enable reduced manning through systems automation, minimizing the need for manual Damage Control (DC) actions; 2) personnel protection systems/devices that increase endurance and reduce stress on DC personnel during sustained operations; 3) tactics and doctrine for attacking major threat, ship threatening conflagration; 4) damage tolerant structures that increase hull girder survival against underwater explosions; and 5) system protection devices that enable continued system operation after damage. In FY 2001, PEO (S) was given funding to perform studies related to Power Node Control Centers (PNCCs). PNCCs have the potential to integrate all of the shipboard power functions, such as switching, conversion, distribution and system operation and protection. This technology would support present and future surface ship and submarine platforms as a building block for increased use of electrical equipment. The PNCC concept can potentially improve survivability by enabling an electrical system architecture that can locate and clear faults automatically, provide continuity of power through fast switching and rerouting of power, and provide electrical nodes capable of programmable, multi-function, operations.

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$0.378) Continued development of the pre-hit Configuration Management capability. Continued DD 21 combat/damage control systems integration for monitoring advanced, projected DD 21 threats. Continued development of a lightweight firefighting/boundary suit ensemble.
- (U) (\$2.419) Began initial System Design and engineering of DD 21 DC/Survivability systems.
- (U) (\$0.200) Continued design of damage tolerant hull girder configurations that limit holing and flooding and prevent ship sinking from close-in UNDEX.

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001																						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER DC/Survivability/32465																							
<p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$0.424) Continue development of the pre-hit Configuration Management capability including development of post-hit electrical fault clearing approaches for medium voltage systems. Initiate planning for electrical system T&E to evaluate system isolation performance under projected threat conditions. Complete development of a lightweight firefighting/boundary suit ensemble. - (U) (\$2.568) Complete initial System Design and engineering of DD 21 DC/Survivability systems. Begin system/subsystem development of DC/Survivability systems. - (U) (\$0.200) Continue design of damage tolerant hull girder configurations that limit holing and flooding and prevent ship sinking from close-in UNDEX. - (U) (\$3.000) Power Node Control Centers. Perform studies to assess the impact of using PNCCs on solid state breakers within the IPS architectures. Examine how PNCC concept could be integrated into the IPS design. Design/develop engineering hardware model. - (U) (\$0.068) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>3. (U) FY 2002 PLAN: See PE 0603513N, Shipboard System Component Development.</p> <p>B. (U) OTHER PROGRAM FUNDING SUMMARY:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th style="text-align: left;">COST (\$ in Millions)</th> <th style="text-align: center;">FY 2000</th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> <tr> <td>Shipboard System Component Dev/0603513N</td> <td style="text-align: right;">108.548</td> <td style="text-align: right;">256.065</td> <td style="text-align: right;">288.382</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>C. (U) ACQUISITION STRATEGY:</p>										COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							Shipboard System Component Dev/0603513N	108.548	256.065	288.382						
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002																										
Shipboard System Component Dev/0603513N	108.548	256.065	288.382																										

R-1 SHOPPING LIST - Item No. 110-11 of 110-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 11 of 24)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N	PROJECT NAME AND NUMBER DC/Survivability/32465								
<p>D. (U) SCHEDULE PROFILE:</p> <table><thead><tr><th><u>FY 2000</u></th><th><u>FY 2001</u></th></tr></thead><tbody><tr><td>4Q Pre-Hit Configuration Management Software Code</td><td>4Q Electrical Options (Prel)</td></tr><tr><td>1Q Initial System Design</td><td>1Q DD 21 System/Subsystem Development</td></tr><tr><td></td><td>4Q Lightweight Firefighting Boundary Suit</td></tr></tbody></table>			<u>FY 2000</u>	<u>FY 2001</u>	4Q Pre-Hit Configuration Management Software Code	4Q Electrical Options (Prel)	1Q Initial System Design	1Q DD 21 System/Subsystem Development		4Q Lightweight Firefighting Boundary Suit
<u>FY 2000</u>	<u>FY 2001</u>									
4Q Pre-Hit Configuration Management Software Code	4Q Electrical Options (Prel)									
1Q Initial System Design	1Q DD 21 System/Subsystem Development									
	4Q Lightweight Firefighting Boundary Suit									

R-1 SHOPPING LIST - Item No. 110-12 of 110-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 12 of 24)

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SC-21 Total Ship System Eng/0604300N			DC/Survivability/32465						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWCCD Phila. Pa				3.000	03/01			0.000	3.000	
Ancillary Hardware Development												
Systems Engineering												
Product Development	Sec 845/804	DD 21 Industry Team	2.180	2.419	11/99	2.636	11/00			0.000	7.235	
	WR	NSWC CD Bethesda, MD	3.588	0.283	11/99	0.510	11/00			0.000	4.381	
	Various	Other Govt. Activities	4.956	0.295	Various	0.114	Various			0.000	5.365	
	Various	Other Contractors	1.080	0.000	N/A	0.000	N/A			0.000	1.080	
Subtotal Product Development			11.804	2.997		6.260				0.000	21.061	
Remarks: For FY 2002 and out, this effort has been reprogrammed to PE 0603513N, Project 32465. See those exhibits for FY 02 information.												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 110-13 of 110-24

Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SC-21 Total Ship System Eng/0604300N			DC/Survivability/32465						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			11.804	2.997		6.260		0.000		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 110-14 of 110-24

Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification					DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER Multi-Function Radar (MFR) / 32466					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002						
Project Cost	44.389	72.901	73.262						
RDT&E Articles Qty	0	0	1						
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funds for the development of the Multi-Function Radar (MFR) in association with DD 21 and CVN 77. This provides DD 21 and other applicable surface ships with an affordable, high performance radar for ship defense well into the next century. This system is based on solid state, active array radar technology and will provide search, detect, track, and weapon control functions while dramatically reducing manning and life-cycle costs associated with multiple systems that perform these functions today. The MFR will achieve a level of force protection that greatly enhances ship defense capability against all threats envisioned in the littoral environment. A Test Article will be available in FY 02 to support DT/OA land-based and at-sea testing.</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$38.400) Continued Engineering and Manufacturing Development (E&MD) phase of MFR. Developed and provided technical design data to support Critical Design Review (CDR). Procured Engineering Development Model (EDM) hardware. - (U) (\$4.521) Provided Government Engineering Services support for E&MD. Performed oversight and assessment of MFR E&MD efforts. Conducted CDR. - (U) (\$1.468) Provided Program Management in support of the above program milestones. 									

R-1 SHOPPING LIST - Item No. 110-15 of 110-24

Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER Multi-Function Radar (MFR) / 32466			
<p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$61.000) Continue E&MD phase of MFR. Continue EDM hardware procurement and start fabrication. Transmit/Receive (T/R) Module Production Readiness Review complete. - (U) (\$4.127) Provide Government Engineering Services support for E&MD. Perform oversight and assessment of MFR E&MD efforts. - (U) (\$5.000) Begin evaluation, planning, documentation and scheduling for FY 02 Developmental Tests and Operational Assessment (DT/OA). - (U) (\$1.065) Provide Program Management in support of the above program milestones. - (U) (\$1.709) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$50.000) Continue E&MD phase of MFR. Deliver EDM to Navy Land Based Test Site. Provide test and integration support for Navy Land Based Testing. - (U) (\$10.312) Government Engineering Services and program management support for E&MD. Perform oversight and assessment of MFR E&MD efforts. Evaluate EDM delivered unit. Support Navy Land Based Testing. - (U) (\$12.000) Continue evaluation, planning, documentation and scheduling for DT/OA. Conduct DT/OA. - (U) (\$0.950) Provided Program Management in support of the above program milestones. 									
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002					
Shipboard System Component Dev/0603513N		108.548	256.065	288.382					
<p>C. (U) ACQUISITION STRATEGY:</p> <p>(U) In FY 1999, the Government selected a single MFR contractor (Raytheon) to begin Phase III E&MD. EDM delivery will be in FY 2002.</p>									

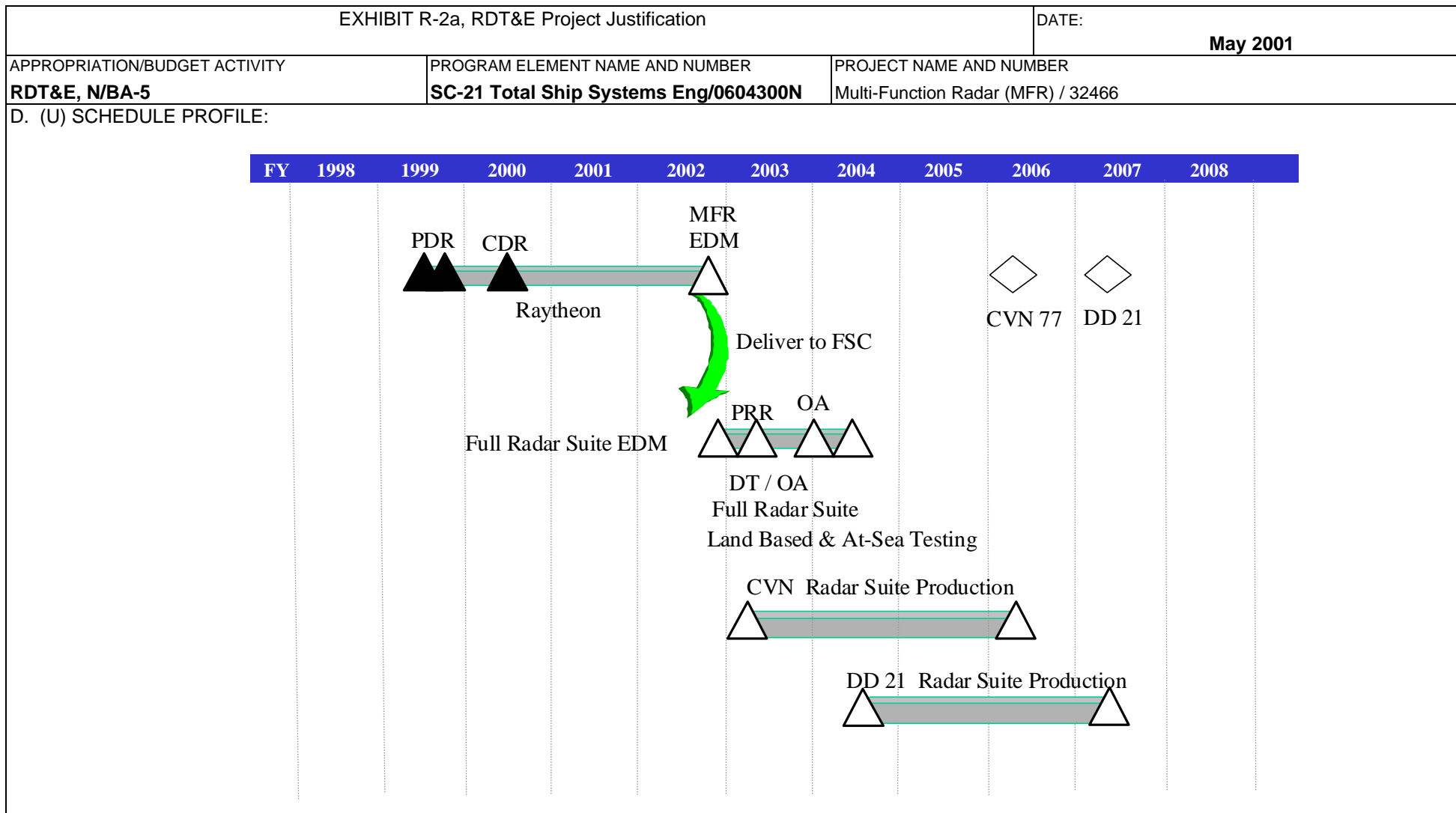
R-1 SHOPPING LIST - Item No. 110-16 of 110-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 16 of 24)

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R-1 SHOPPING LIST - Item No. 110-17 of 110-24

Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SC-21 Total Ship System Engin/0604300N			Multi-Function Radar (MFR) / 32466						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF/IF	Prime E&MD (Raytheon)	12.000	38.400	11/99	61.000	11/00	50.000	11/01	CONT.	CONT.	195.000
	Sec 845/804	DD 21 Industry Team	2.434	0.000	N/A	0.000	N/A	0.000	N/A	0.000	2.434	
	CP	Various	12.414	0.000	N/A	0.000	N/A	0.000	N/A	0.000	12.414	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Subtotal Product Development			26.848	38.400		61.000		50.000		CONT.	CONT.	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 110-18 of 110-24

Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SC-21 Total Ship System Engin/0604300N			Multi-Function Radar (MFR) / 32466						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various				5.000	11/00	3.000	11/01	CONT.	CONT.	
	TBD	Land Based Test Site						9.000	11/01	CONT.	CONT.	
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		5.000		12.000		CONT.	CONT.	
Remarks:												
Government Engineering Support	WR	NSWC DD Dahlgren, VA	2.000	1.700	12/99	1.700	11/00	1.700	11/01	CONT.	CONT.	
	WR	NSWC PHD Pt Hueneme, CA	1.000	1.000	12/99	0.900	11/00	0.900	11/01	CONT.	CONT.	
	SS/CPFF	JHU/APL Laurel, MD	1.000	1.000	12/99	1.100	11/00	1.100	11/01	CONT.	CONT.	
	WR	Various	2.197	0.821	12/99	2.136	11/00	6.612	11/01	CONT.	CONT.	
Program Management Support	C/CPFF	Various	0.600	1.468	12/99	1.065	11/00	0.950	11/01	CONT.	CONT.	
Travel												
Subtotal Management			6.797	5.989		6.901		11.262		CONT.	CONT.	
Remarks:												
Total Cost			33.645	44.389		72.901		73.262		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 110-19 of 110-24

Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification					DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER Volume Search Radar (VSR) / 32735					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002						
Project Cost	(1) 0.000	56.930	47.367						
RDT&E Articles Qty	0	0	1						

Note: 1. (U) FY00 funding for VSR development is included in PE 0603512N, Project 42208 (Future Carrier R&D) and PE 0604755N, Project 32735 (Ship Self Defense). All requirements in FY 2001 and beyond are consolidated in PE 0604300N, Project 32735.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funds for the development of the Volume Search Radar (VSR) in association with DD 21. This provides DD 21 and other applicable surface ships with an affordable, high performance air search radar. This system is based on solid state, active array radar technology and will provide search, detect, and track while dramatically reducing manning and life-cycle costs associated with multiple systems that perform these functions today. VSR provides long range above-the-horizon surveillance and timely cueing to MFR. A Test Article will be available in FY 02 to support DT/OA land-based and at-sea testing.

1. (U) FY 2000 ACCOMPLISHMENTS:
 Note: FY 2000 accomplishments budgeted in PE 0604755N, Project 32735. All requirements in FY 2001 and beyond are consolidated in PE 0604300N, Project 32735.

- (U) (\$2.448) Began VSR Engineering and Manufacturing Development (E&MD) leading toward Preliminary Design Review (PDR).
- (U) (\$11.000) Continued Preliminary Design and conducted PDR. Continued E&MD Phase.
- (U) (\$2.591) Provided Government Engineering Services to support Radar Suite Acquisition Team (RSAT) for VSR E&MD.

2. (U) FY 2001 PLAN:

- (U) (\$51.597) Complete Critical Design Reviews (CDRs) in early FY01 for both DD 21 competing teams. After DD 21 downselect, the Full Service Contractor (FSC) will procure Engineering Development Model (EDM) hardware and start fabrication
- (U) (\$3.695) Provide Government Engineering Services support for E&MD. Perform oversight and assessment of VSR E&MD efforts and system integration.
- (U) (\$0.212) Provide Program Management in support of the above program milestones.
- (U) (\$1.426) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

R-1 SHOPPING LIST - Item No. 110-20 of 110-24

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 20 of 24)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NAME AND NUMBER SC-21 Total Ship Systems Eng/0604300N			PROJECT NAME AND NUMBER Volume Search Radar (VSR) / 32735				
<p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$37.975) Continue E&MD phase of VSR, and deliver EDM to the Navy Land Based Test Site. Provide test and integration support for Navy Land Based Testing. - (U) (\$1.940) Provide Government Engineering Services support for E&MD. Perform oversight and assessment of MFR E&MD efforts. Evaluate EDM delivered unit. Support Navy Land Based Testing. - (U) (\$7.240) VSR test and evaluation, planning, documentation and scheduling. - (U) (\$0.212) Provide Program Management in support of the above program milestones. 										
B. (U) OTHER PROGRAM FUNDING SUMMARY										
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002						
Shipboard System Component Dev/0603513N		108.548	256.065	288.382						
<p>C. (U) ACQUISITION STRATEGY:</p> <p>(U) In FY 2001, the Government will downselect to a single DD 21 industry team. The Full Service Contractor (FSC) will fabricate and deliver the VSR EDM in FY 2002. MFR/VSR Radar Suite DT/OA is anticipated in FY 2002 through FY 2004.</p>										

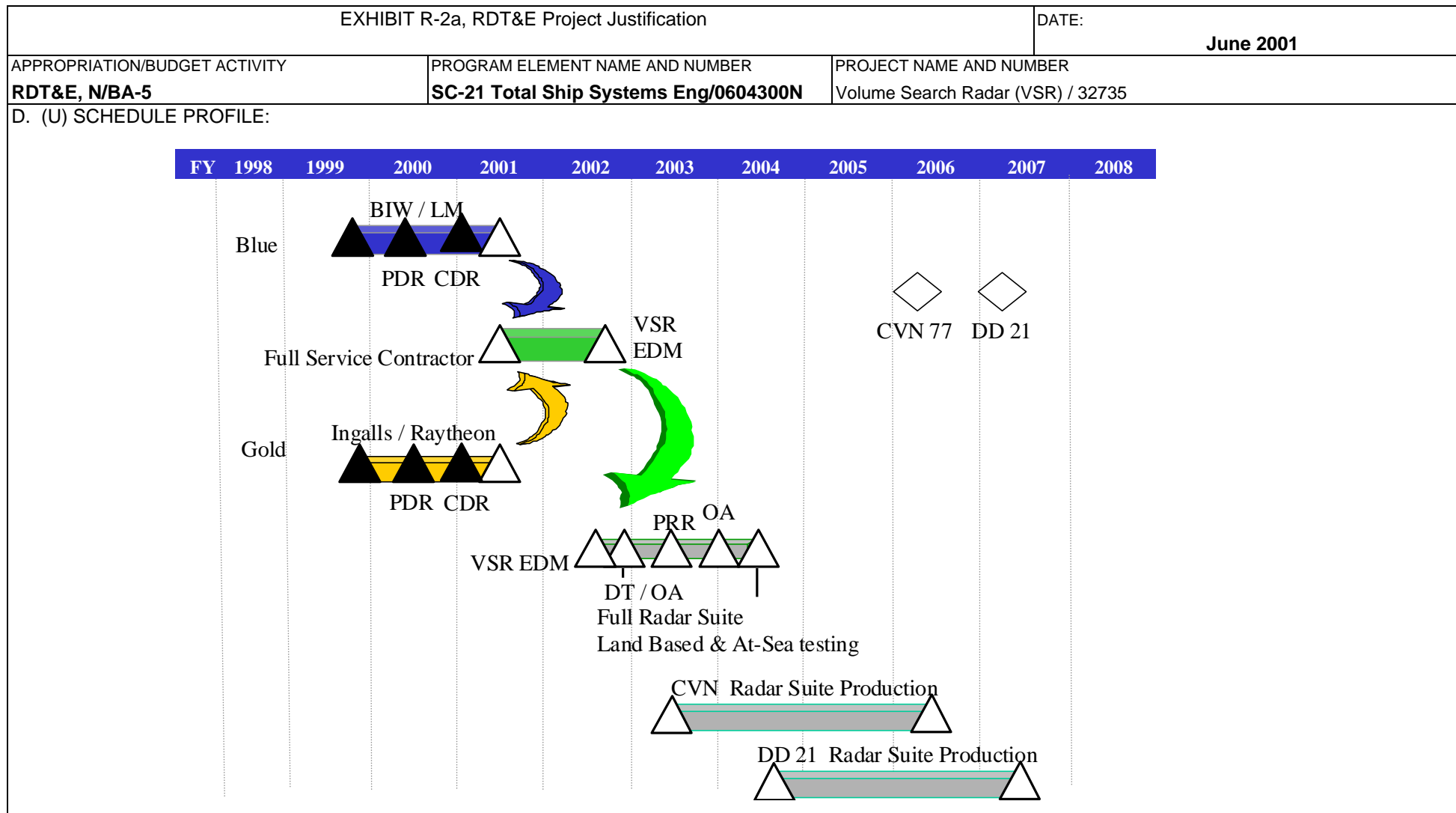
R-1 SHOPPING LIST - Item No. 110-21 of 110-24

Exhibit R-2a, RDT&E Project Justification
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R-1 SHOPPING LIST - Item No. 110-22 of 110-24

Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT				
RDT&E, N/BA-5								SC-21 Total Ship System Engin/0604300N				
PROJECT NAME AND NUMBER								Volume Search Radar (VSR) / 32735				
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Sec 845/804	DD 21 Industry Team	0.000	0.000	N/A	28.597	10/00	0.000	N/A	0.000	28.597	
	CPIF	DD 21 FSC	0.000	0.000	N/A	23.000	06/01	37.975	11/01	CONT.	CONT.	
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Subtotal Product Development			0.000	0.000		51.597		37.975		CONT.	CONT.	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 110-23 of 110-24

Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)									DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SC-21 Total Ship System Engin/0604300N			Volume Search Radar (VSR) / 32735						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation	TBD	Various						2.240	11/01	CONT.	CONT.	
	TBD	Land Based Test Site						5.000	11/01	CONT.	CONT.	
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000		7.240		CONT.	CONT.	
Remarks: No Developmental or Operational Test and Evaluation will be conducted during FY 1999 through FY 2001.												
Government Engineering Support	WR	NSWC DD Dahlgren, VA	0.000	0.000	N/A	1.300	11/00	0.900	11/01	CONT.	CONT.	
	WR	Various	0.000	0.000	N/A	3.821	11/00	1.040	11/01	CONT.	CONT.	
Program Management Support	C/CPFF	Various	0.000	0.000	N/A	0.212	11/00	0.212	11/01	CONT.	CONT.	
Travel			0.000	0.000	N/A	0.000	11/00	0.000	11/01	CONT.	CONT.	
Subtotal Management			0.000	0.000		5.333		2.152		CONT.	CONT.	
Remarks:												
Total Cost			0.000	0.000		56.930		47.367		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 110-24 of 110-24

Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
							June 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RDT&E, N / 1319 / BA 5					AEGIS COMBAT SYS ENG / PE 0604307N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Total PE Cost	240.898	200.330	262.037							
Surf Combatant Combat Sys/K1447/K2637	227.404	193.691	257.737							
Surf Combatant Weapon Sys Mod/K1776	4.062	4.162	4.300							
Surf Combatant Weapons Dev/K1937	6.511	0.000	0.000							
Smart Ship Project/K2308/K2786	2.921	2.477	0.000							
A. (U) Mission Description and Budget Item Justification										
The AEGIS Combat System provides immediate and effective capability to counter the current and expected air, surface, and sub-surface threats. Changes in the threat capability and advances in technology such as fiber optics, local area networks, and high performance computing require corresponding Weapon System and Combat System changes. This program provides the Combat System engineering and selected weapons development necessary for a continued increase in the capability of the Combat System in AEGIS cruisers and destroyers. In addition to developing and integrating improvements to the AEGIS Weapon System, this program integrates combat capabilities developed in other Navy R&D programs into the AEGIS Combat System. Modifications of AEGIS Weapon System computer programs must be made to integrate these capabilities into the AEGIS Combat System so that battle effectiveness and Combat System performance will be retained against the evolving threat. Selected Weapon and Combat System upgrades will be backfit into CG 47 Class and DDG 51 Class ships already in the Fleet, providing key warfighting capability while reducing life cycle maintenance costs. In addition, with the advent of using Commercial Off-the-Shelf (COTS) equipment extensively throughout the combat system, a COTS refresh development effort will be necessary to parallel the core baseline development work.										

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Exhibit R-2, RDT&E Budget Item Justification
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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	
		June 2001	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RDT&E, N / 1319 / BA 5		AEGIS COMBAT SYS ENG / PE 0604307N	
B. Program Change Summary			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
FY 2001 President's Budget Submit:	256.120	179.684	194.015
Appropriated Value:	257.980	202.184	
Adjustments to FY2000/2001 Appropriated Value/			
FY2001 President's Budget:	-17.082	-1.854	68.022
FY 2002 President's Budget:	240.898	200.330	262.037
Funding:			
FY2000 funding change is due to reductions for SBIR (\$-6.347), ONR BTR update (\$-3.532), midyear review adjustments, (\$-1.626), FY00 Actuals (\$-2.691), across-the-board reductions (-\$1.422), and minor pricing adjustments (-\$1.464).			
FY2001 funding changes are due to minor pricing adjustments (\$-1.854).			
FY 2002 funding changes are due to an increase for Area Air Defense Commander (AADC) (\$16.500), an increase for development to support Refresh of Commercial Off-The-Shelf (COTS) components in baselines 6 Phase III, and 7 Phase I (\$48.000), rephasing for SPY radar modifications and increase for COTS Refresh of CG Conversion (\$2.900), decrease for minor pricing/rate adjustments (-\$0.622).			
Schedule: 1) Four COTS baseline refresh efforts have been added to the schedule because they require additional developmental efforts that necessitate replacement of commercial components to support updating operating systems, device drivers, and interfaces. COTS Refresh efforts have been added to the scope of Baseline 7 Phase IC (Two deliveries of Cruiser Conversion baseline), and two new baselines introduced to support DDG construction (Baseline 7 Phase I Refresh) and DDG Modernization (Baseline 6 Phase III Refresh).			
Technical: Not applicable.			

R-1 SHOPPING LIST - Item No.111-2 of 111-13

Exhibit R-2, RDT&E Budget Item Justification
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EXHIBIT R-2a, RDT&E Project Justification						DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND					
RDT&E, N / 1319 / BA 5	AEGIS COMBAT SYS ENG PE 0604307N				Surface Combatants Combat Sys Improv - K1447					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Project Cost	227.404	193.691	257.737							
RDT&E Articles Qty										
A. (U) Mission Description and Budget Item Justification: This program provides AEGIS Cruiser and Destroyer Combat System upgrades and integrates new equipment and systems to pace the threat and capture advances in technology. Examples of captured advanced technologies are: fiber optics, distributed architecture, and high performance computing which all require corresponding Weapon System and Combat System changes. Combat Systems are upgraded in baselines. Baseline 2 (CG 52-58) consists of the Vertical Launching System, TOMAHAWK Weapon System, and Anti-Submarine Warfare upgrades. Baseline 3 (CG 59-64) includes the AN/SPY-1B Radar and AN/UYQ-21 consoles. Baseline 4 (CG 65-73) integrates the AN/UYK-43/44 computers with superset computer programs developed for the DDG 51. Baseline 5 was introduced in FY 1992 ships and includes the Joint Tactical Information Distribution System (JTIDS) Command and Control Processor, Tactical Data Information Link 16, Combat Direction Finding, Tactical Data Information Exchange System, AN/SLQ-32 (V)3 Active Electronic Counter Countermeasures, and AEGIS Extended Range (ER) Missile. Baseline 5 was developed in three steps (phases): Phase I integrated AEGIS ER and supported the missile Initial Operational Capability; Phase II integrated system upgrades including Deceptive Electronic Countermeasures, Track Load Control algorithms, and Track Initiation Processor; Phase III integrated JTIDS and the OJ-663 color display Tactical Graphics Capability into the AEGIS Combat System. Baseline 6 Phase I supports OPEVAL of CEC in CGs 66 and 69 and will be introduced in the DDG 51 class beginning with the last ship in FY94, DDG 79. Baseline 6 Phase III is planned for the first ship in FY 1997. Baseline 6 Phase III is the designation for the combat system upgrade resulting from consolidation of the previous Baseline 6 Phase II with functions designed to introduce Theater Ballistic Missile Defense (TBMD) to in-service ships. Baseline 6 upgrades will also include embarked helicopters, Fiber Optics as applied to Data Multiplexing (FODMS), implementation of affordability initiatives, the Radar Set Controller Environmental Simulator (RSCES) and Battle Force Tactical Trainer (BFTT), Advanced Display System, Evolved SEASPARROW Missile (ESSM), Identification (ID) upgrades Phase I, Advanced TOMAHAWK Weapon System (ATWCS) Phase II, Fire Control System Upgrades, and the Joint Maritime Command Information System (JMCIS). Baseline 7 Phase I is planned for the third MYP DDG-51 Class ship in FY 1998. Major Baseline 7 upgrades include but are not limited to: AN/SPY-1D(V) Radar upgrade, COTS-based advanced computer processing and the Remote Mine Hunting System. The Cruiser Conversion program will upgrade cruisers with Theater Ballistic Missile Defense, Land Attack, and Area Air Defense Commander (AADC) capabilities. Experiences aboard AEGIS ships and shore sites have shown that Commercial Off-The-Shelf (COTS) equipment will require a nominal five year cyclical refresh (periodic replacement) plan. This is a fact of life. Currently, these refresh efforts are not "plug and play", rather they require additional developmental efforts that will necessitate replacement of new components with updated operating systems, device drivers, and interfaces. COTS refresh efforts are required and have been funded for Baselines 6 Phase III, 7 Phase I, and 7 Phase IC (Two variants of Cruiser Conversion baseline due to radar configuration).										

R-1 SHOPPING LIST - Item No. 111-3 of 111-13

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / 1319 / BA 5	PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N	PROJECT NAME AND NUMBER: Surface Combatants Combat Sys Improv - K1447
<p>FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$1.200) Continued modifications to the AWS computer program to allow incorporation of AAW capability into the SM2 BLK IVA missile. - (U) (\$29.440) Continued ET&E and MEIT for Baseline 6 Phase I. Delivered updated 6 Ph I programs to CG 66 and 69 for testing. Continued preparation for CEC OPEVAL on CGs 66 and 69. Included (\$10.000) Congressional Plus up to continue development of the ADS MK 6 Capability 7 months longer than planned and incorporated corrections to high-priority anomalies found during ET&E. <ul style="list-style-type: none"> - (U) (\$85.603) Continued coding and extensive Baseline 6 Phase III ET&E and MEIT at CSEDS and the Production Test Center (PTC). Included (\$40.000) Congressional Plus up to support integration of COTS based Adjunct Processors into the SPY radar, ADS, and Command & Decision Element. Additionally, these funds were used to reduce the risk in delivering the unanticipated increasingly complex tactical display services associated with ADS Mk - (U) (\$44.500) Conducted Critical Design Review (CDR) and began code, debug and test (CDT) for 7 Phase I computer program. - (U) (\$25.500) Conducted System Design Review for the Cruiser Conversion Program to incorporate warfighting capabilities including TBMD, AADC, and Land Attack into Baseline 3 and 4 Cruisers. This included beginning the development of the Baseline 6 Phase IIIC computer program . Included (\$5.000) Congressional Plus up to Conduct Baseline I Cruiser Conversion feasibility study. - (U) (\$1.000) Continued evaluation of the AADC Prototype at sea and conducted Joint Task Force Exercise (JTFEX) using the installed AADC systems. Provided necessary logistics and system engineering support to maintain the AADC Prototype at Sea system in an operationally ready state and support production efforts. - (U) (\$20.640) Continued to provide the RDT&E share of operations and maintenance of the CSED Site, Program Generation Center, Computer Program Test Site, and Land Based Test Site. - (U) (\$19.521) Provided funds for labs and field activities to support forward fit baseline upgrade in order to conduct engineering and scientific studies and analysis to minimize the risk in the introduction of increased warfighting capability including TBMD, CEC, ESSM, and AIEWS into the AEGIS Combat System. Studies produced by the Applied Physics Lab and the Naval Surface Warfare Center, Dahlgren Division (NSWC, DD) ensured effective introduction of Commercial Off the Shelf Technology (COTS). NSWC, DD personnel also provided on site technical support at contractor facilities during development, testing, and evaluation of upgrades to the AEGIS Combat System. <p>FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$0.400) Complete modifications to the AWS computer program to allow incorporation of SM2 BLK IVA missile AAW capability . - (U) (\$5.500) Support CEC OPEVAL (scheduled: 05/2001) on CGs 66 and 69. - (U) (\$42.042) Continue with extensive Baseline 6 Phase III ET&E and MEIT at CSEDS and the Production Test Center (PTC). Deliver program to shipyards for first stage testing in new construction ships. Conduct demo of 6 Phase III and Computer Program Acceptance Panel. Begin preparations for TBMD DT/OT and ESSM DT/OT. Begin developmental efforts for COTS refresh of Baseline 6 Phase III, evaluating integration of advanced warfighting capability upgrades into the AWS in order to meet the evolving threat. 		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER:
RDTE, N / 1319 / BA 5	AEGIS COMBAT SYS ENG PE 0604307N	Surface Combatants Combat Sys Improv - K1447
<p>- (U) (\$54.481) Continue code, debug and test (CDT) for 7 Phase I computer program. Begin developmental efforts for COTS refresh of Baseline 7 Phase I.</p> <p>- (U) (\$47.600) Continue development of the computer program for Cruiser Conversion in a Baseline 7 Phase I architecture which incorporates TBMD, AADC, and Land Attack capabilities and a COTS refresh into the Baseline 3&4 Cruisers. Conduct updated System Design Review of the 7 Phase IC computer program.</p> <p>- (U) (\$22.260) Continue to provide the RDT&E share of operations of the CSED Site, Program Generation Center, Computer Program Test Site, and Land Based Test Site.</p> <p>- (U) (\$17.377) Provides funds for labs and field activities to support forward fit baseline upgrade in order to conduct engineering and scientific studies and analysis to minimize the risk in the introduction of increased warfighting capability including TBMD, CEC, ESSM, and AIEWS into the AEGIS Combat System. Studies produced by the Applied Physics Lab and the Naval Surface Warfare Center, Dahlgren Division (NSWC, DD) ensure effective introduction of Commercial Off the Shelf Technology (COTS). NSWC, DD personnel also provide on site technical support at contractor facilities during development, testing, and evaluation of upgrades to the AEGIS Combat System.</p> <p>- (U) (\$4.031) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p> <p>FY 2002 PLAN:</p> <p>- (U) (\$20.540) Support TBMD Developmental Test (DT) and ESSM DT/OT. Continue preparations for TBMD Operational Test (OT).</p> <p>- (U) (\$20.000) Analyze and assess candidate components to replace Diminishing Manufacturing Source (DMS) equipment for Baseline 6 Phase III COTS refresh and make final selection. Continue Designing, Coding, and Testing of Baseline 6 Phase III COTS refresh.</p> <p>- (U) (\$56.470) Continue with extensive Baseline 7 Phase I Engineering Test and Evaluation (ET&E) and Multi-Element Integration and Test (MEIT) at Combat Systems Engineering Development Site (CSEDS) and the Production Test Center (PTC). Deliver program to shipyards for first level testing in new construction ships. Conduct demo of Baseline 7 Phase I and Computer Program Acceptance Panel.</p> <p>- (U) (\$29.000) Analyze and assess candidate components to replace Diminishing Manufacturing Source (DMS) equipment for Baseline 7 Phase I COTS refresh and make final selection. Continue Designing, Coding, and Testing of Baseline 7 Phase I COTS refresh.</p> <p>- (U) (\$90.000) Continue development of Baseline 7 Phase IC computer program for the Cruiser Conversion Program which incorporates TBMD, AADC, and Land Attack capabilities into the Baseline 3&4 Cruisers. Conduct Preliminary Design Review. Analyze and assess candidate components to replace Diminishing Manufacturing Source (DMS) equipment for 7 Phase IC COTS Refresh. Begin SPY Radar Engineering effort to support necessary SPY-1D(V) modifications.</p> <p>- (U) (\$23.400) Continue to provide the RDT&E share of operations and maintenance of the CSED site, Program Generation Center, Computer Program Test Site, and Land Based Test Site.</p> <p>- (U) (\$18.327) Provides Funds for labs and field activities to support forward fit baseline upgrade in order to conduct engineering and scientific studies and analysis to minimize the risk in the introduction of increased warfighting capability including TBMD, CEC, ESSM, and AIEWS into the AEGIS Combat System. Studies produced by the Applied Physics Lab and the Naval Surface Warfare Center, Dahlgren Division (NSWC, DD) ensure effective introduction of Commercial Off the Shelf Technology (COTS). NSWC, DD personnel also provide on site technical support at contractor facilities during development, testing, and evaluation of upgrades to the AEGIS Combat System.</p>		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5	PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N	PROJECT NAME AND NUMBER: Surface Combatants Combat Sys Improv - K1447																			
<p>B. Other Program Funding Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>SCN LI2122 - DDG 51*</td> <td style="text-align: right;">2,753.773</td> <td style="text-align: right;">3,303.190</td> <td style="text-align: right;">2,314.869</td> </tr> <tr> <td>OPN LI5246 - AEGIS Supt. Eqp</td> <td style="text-align: right;">79.530</td> <td style="text-align: right;">29.356</td> <td style="text-align: right;">155.113</td> </tr> </tbody> </table> <p>*Data includes outfit and post delivery</p> <p>Related RDT&E:</p> <table style="width: 100%;"> <tr> <td>PE 0604867C (Navy Area Missile Defense-EMD)</td> <td>PE 0603658N (Cooperative Engagement Capability)</td> </tr> <tr> <td>PE 0603382N (Advanced Combat System Technology)</td> <td>PE 0604755N (Ship Self Defense)</td> </tr> <tr> <td>PE 0603868C (Navy Theater Wide Missile Defense)</td> <td>PE 0604366N (Standard Missile Improvements)</td> </tr> </table> <p>C. Acquisition Strategy: Combat System Improvements are implemented in Baselines as described in the project mission statement. In FY 1998, Lockheed Martin was awarded a five year omnibus contract (sole source) to develop and integrate combat system improvements, which will fund all remaining AEGIS Baseline Upgrade Development efforts. After the baseline has been completed and tested, the computer program and associated equipment are delivered to the new construction shipbuilders where the program and equipment are installed and tested along with all other elements of the shipboard combat system and associated combat support systems. The computer program is a GFE deliverable to the Production Test Center for equipment test and check out.</p>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	SCN LI2122 - DDG 51*	2,753.773	3,303.190	2,314.869	OPN LI5246 - AEGIS Supt. Eqp	79.530	29.356	155.113	PE 0604867C (Navy Area Missile Defense-EMD)	PE 0603658N (Cooperative Engagement Capability)	PE 0603382N (Advanced Combat System Technology)	PE 0604755N (Ship Self Defense)	PE 0603868C (Navy Theater Wide Missile Defense)	PE 0604366N (Standard Missile Improvements)
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																		
SCN LI2122 - DDG 51*	2,753.773	3,303.190	2,314.869																		
OPN LI5246 - AEGIS Supt. Eqp	79.530	29.356	155.113																		
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PE 0603382N (Advanced Combat System Technology)	PE 0604755N (Ship Self Defense)																				
PE 0603868C (Navy Theater Wide Missile Defense)	PE 0604366N (Standard Missile Improvements)																				

R-1 SHOPPING LIST - Item No. 111-6 of 111-13

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 6 of 13)

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

June 2001

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N / 1319 / BA 5

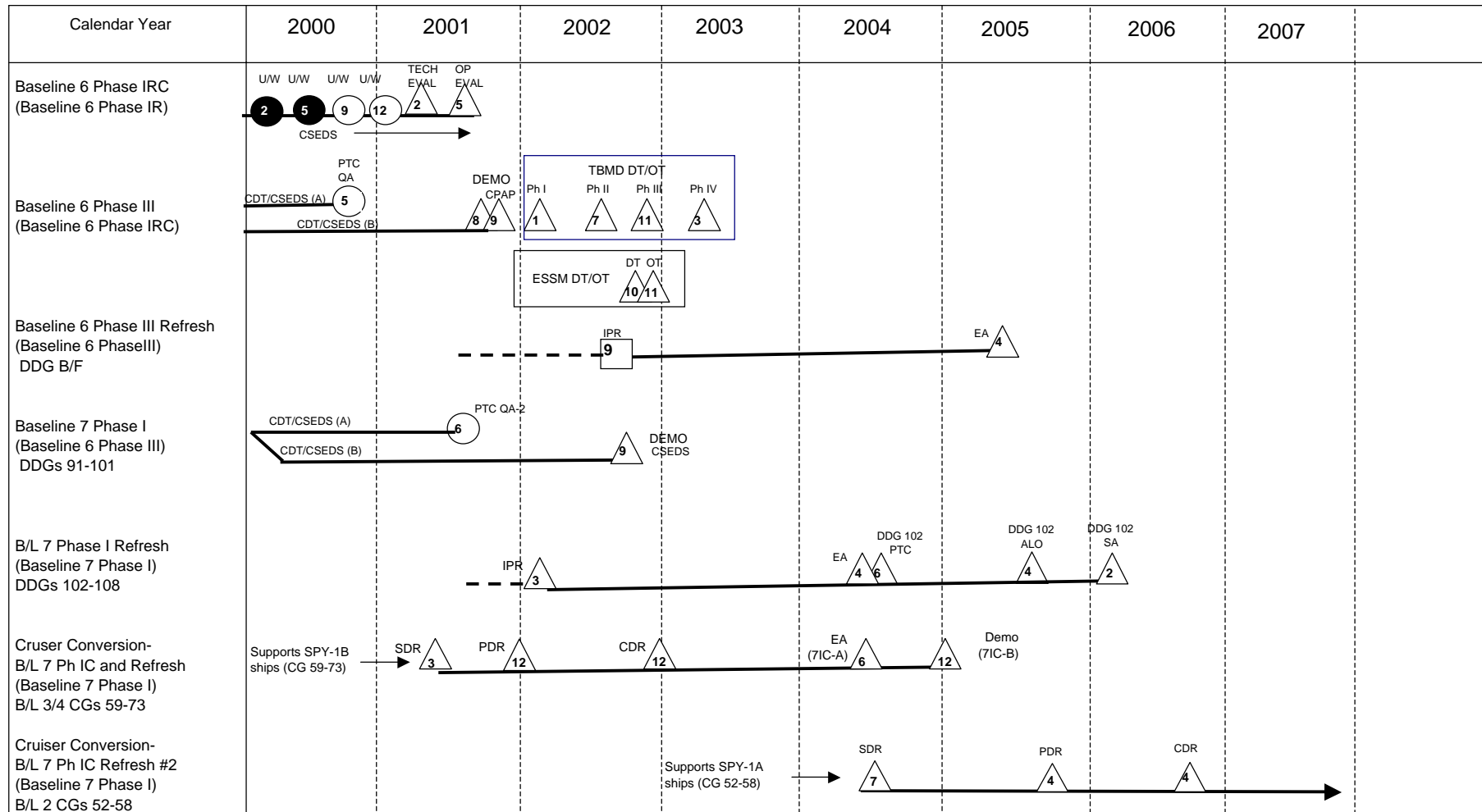
PROGRAM ELEMENT NAME AND NUMBER

AEGIS COMBAT SYS ENG PE 0604307N

PROJECT
NAME AND
NUMBER:

Surface Combatants Combat Sys Improv - K1447

D. Schedule Profile:



R-1 SHOPPING LIST - Item No.111-7 of 111-13

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 7 of 13)

UNCLASSIFIED

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5			PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N			PROJECT NAME AND NUMBER: Surface Combatants Combat Sys Improv - K1447						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	394.849	163.272	03/00	123.930	03/01	168.579	03/02	CONT.	CONT.	
Systems Engineering	SS/CPFF	APL, Baltimore MD	22.007	1.170	10/99	2.100	10/00	2.500	10/01	CONT.	CONT.	
Systems Engineering	WR/RCP	NSWC, Dahlgren VA	45.686	21.398	12/99	13.000	12/00	16.271	12/01	CONT.	CONT.	
Systems Engineering	SS/CPAF	PCI, VA Beach, VA	2.325	2.325	03/00	2.325	03/01	2.300	03/02	CONT.	CONT.	
Systems Engineering	SS/CPAF	BAE Systems, Rockville MD	21.960	1.840	03/00	1.840	03/01	1.800	03/02	CONT.	CONT.	
Systems Engineering	WR/RCP	NWAS, Corona CA	1.100	0.882	11/99	0.703	11/00	2.250	11/01	CONT.	CONT.	
Systems Engineering	SS/CPAF	Litton	0.997	0.000	na	0.000	na	0.000	na	CONT.	CONT.	
Systems Engineering	SS/CPAF	Boeing	0.990	0.000	na	0.000	na	0.000	na	CONT.	CONT.	
Systems Engineering	SS/CPAF	General Dynamics	0.999	11.515	07/00	17.000	various	18.000	various	CONT.	CONT.	
Systems Engineering	RCP	SPAWAR	2.260	0.320	11/99	1.600	11/00	0.065	11/01	CONT.	CONT.	
Systems Engineering	CPFF	Techmatics	0.000	0.000	na	0.000	11/00	2.000	11/01	CONT.	CONT.	
Systems Engineering	WR/RCP	Miscellaneous	30.922	0.389	various	0.875	various	0.000	various	CONT.	CONT.	
Award Fees	SS/CPAF	Lockheed, Moorestown, NJ	54.118	17.488	03/00	15.352	03/01	23.800	03/02	CONT.	CONT.	
Award Fees	SS/CPAF	BAE Systems, Rockville, MD	0.160	0.160	03/00	0.160	03/01	0.160	03/02	CONT.	CONT.	
Award Fees	SS/CPAF	PCI, VA Beach, VA	0.175	0.175	03/00	0.175	03/01	0.175	03/02	CONT.	CONT.	
Award Fees	WR/RCP	Miscellaneous	2.790	0.000	na	0.000	na	0.000	na	CONT.	CONT.	
Subtotal Product Development			581.338	220.934		179.060		237.900		CONT.	CONT.	
Remarks:												
Support	CPFF	APL, Baltimore MD	7.396	0.180	10/99	0.200	10/00	0.200	10/01	CONT.	CONT.	
Support	WR	NSWC, Pt. Hueneme, CA	0.434	0.150	11/99	1.050	11/00	3.017	11/01	CONT.	CONT.	
Support	WR	NSWC, Dahlgren VA	1.617	0.000	12/99	1.050	12/00	0.000	12/01	CONT.	CONT.	
Support	WR/RCP	Miscellaneous	5.928	0.000	various	0.581	various	0.000	various	CONT.	CONT.	
Subtotal Support			15.375	0.330		2.881		3.217		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 111-8 of 111-13

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 13)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5			PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N			PROJECT NAME AND NUMBER: Surface Combatants Combat Sys Improv - K1447						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test and Evaluation	SS/CPAF	Lockheed, Moorestown, NJ	0.000	1.000	03/00	4.500	03/01	11.822	03/02	CONT.	CONT.	
Test and Evaluation	WR	NSWC, Pt. Hueneme, CA	2.100	2.000	11/99	1.984	11/00	2.000	11/01	CONT.	CONT.	
Test and Evaluation	CPFF	APL, Baltimore MD	0.000	0.180	10/99	3.000	10/00	0.500	10/01	CONT.	CONT.	
Test and Evaluation	WR/RCP	Miscellaneous	7.904	0.000	various	0.788	various	0.820	various	CONT.	CONT.	
Subtotal T&E			10.004	3.180		10.272		15.142		CONT.	CONT.	
Remarks:												
Program Management Support	WR/RCP	Miscellaneous	3.900	2.960	various	1.478	various	1.478	various	CONT.	CONT.	
			0.000									
Subtotal Management			3.900	2.960		1.478		1.478		CONT.	CONT.	
Remarks:												
Total Cost			610.617	227.404		193.691		257.737		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No.111-9 of 111-13

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 9 of 13)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 1319 / BA 5		PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N			PROJECT NAME AND NUMBER: Surface Combatant Weapon System Mod/K1776					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002						
Project Cost		4.062	4.162	4.300						
RDT&E Articles Qty										
<p>A. (U) Mission Description and Budget Item Justification This program provides for modifications to the AEGIS Weapon System MK-7 to counter the threat as articulated in ONI System Threat Assessment Report, ONI TA #046-93 dated May 1993 and subsequent updates. The modifications will be introduced into CG 47 Class and DDG 51 Class ships.</p> <p>FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$2.382) Continued Radar System Engineering Studies to enable AWS to meet the evolving threat. Investigated proposed Deceptive Electronic Counter Measures (DECM) changes and integration plans. - (U) (\$1.224) Developed an Electronic Counter Measure Analysis (ECMA) transition architecture that migrates from Programmable Computer Interface (PCI) based Field Programmable Gated Arrays (FPGA) design to a more supportable configuration. - (U) (\$0.456) Continued Operational Readiness Test Systems (ORTS) design efforts and ECMA or Common signal processor implementation impacts. <p>FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$2.286) Continue Radar System Engineering Studies to enable AWS to meet the evolving threat. - (U) (\$0.334) Definitize signal processing requirements for a Common Moving Target Indicator (MTI)/TBMD adjunct processor design. - (U) (\$1.114) Continue ECMA upgrade effort and develop design package for transition to production. - (U) (\$0.334) Continue ORTS design efforts and support ECMA transition to production. - (U) (\$0.094) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>FY 2002 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$2.459) Continue Radar System Engineering Studies to enable AWS to meet the evolving threat. - (U) (\$0.345) Continue common MTI/TBMD adjunct processor design. - (U) (\$1.151) Continue ECMA upgrade effort and develop design package for transition to production. - (U) (\$0.345) Continue ORTS design efforts and support ECMA transition to production. 										

R-1 SHOPPING LIST - Item No.111-10 of 111-13

Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 10 of 13)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001												
APPROPRIATION/BUDGET ACTIVITY RDTE, N / 1319 / BA 5	PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N	PROJECT NAME AND NUMBER: Surface Combatant Weapon System Mod, K1776												
<p>B. Other Program Funding Summary:</p> <table><thead><tr><th></th><th><u>FY 2000</u></th><th><u>FY 2001</u></th><th><u>FY 2002</u></th></tr></thead><tbody><tr><td>SCN LI2122 - DDG 51</td><td>2,753.773</td><td>3,303.190</td><td>2,314.869</td></tr><tr><td>OPN LI5246 - AEGIS Supt. Eqp</td><td>79.530</td><td>29.356</td><td>155.113</td></tr></tbody></table> <p>Related RDT&E: Not applicable.</p> <p>C. Acquisition Strategy: Lockheed Martin is the sole producer of the AEGIS Weapon System (AWS) except for the AN/SPY-1 Radar transmitter and the MK 99 CWI transmitter and illuminator which are produced by Raytheon. It is anticipated that all AWS modifications will be procured from the original equipment manufacturer.</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	SCN LI2122 - DDG 51	2,753.773	3,303.190	2,314.869	OPN LI5246 - AEGIS Supt. Eqp	79.530	29.356	155.113
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>											
SCN LI2122 - DDG 51	2,753.773	3,303.190	2,314.869											
OPN LI5246 - AEGIS Supt. Eqp	79.530	29.356	155.113											

R-1 SHOPPING LIST - Item No. 111-11 of 111-13

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 11 of 13)

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EXHIBIT R-2a, RDT&E Project Justification						DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDTE, N / 1319 / BA 5		PROGRAM ELEMENT NAME AND NUMBER AEGIS COMBAT SYS ENG PE 0604307N			PROJECT NAME AND NUMBER: Surface Combatant Weapon System Mod/K1776		

D. \$

	00	01	02	03	04	05	06	07
Radar System Engineering	Studies / Analysis / System Solution/ Proposed Equipment Mods. / Proposed C. P. Mods							
Common MTI/TBMD Processor	System Engineering / Design / Build / Test / Debug							
ORTS Upgrades	Design / Build / Test / Debug							
ECMA	Design, Dev., and Verification				Transition to Production			
AWS Warfighting Improvements	Surface Search for SPY-1D(V) / Enhanced Ultra Low / TIP Testability / Dynamic Test Target (DTT)							

R-1 SHOPPING LIST - Item No.111-12 of 111-13

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 12 of 13)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)							DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER:						
RDT&E, N / 1319 / BA 5			AEGIS COMBAT SYS ENG PE0604307			Surface Combatant Weapon System Mod/K1776						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering	SS/CPAF	Lockheed, Moorestown, NJ	19.855	2.075	03/00	1.430	03/01	2.132		CONT.	CONT.	
Systems Engineering	WR/RCP	Naval Laboratories		0.547		0.725		0.700				
Systems Engineering		Wright Patterson AFB		0.152		0.113		0.144				
Systems Engineering		Miscellaneous		0.833		1.597		1.008				
Award Fees	SS/CPAF	Lockheed, Moorestown, NJ	0.417	0.275	03/00	0.297	03/01	0.304	03/02	CONT.	CONT.	
Subtotal Product Development			20.272	3.882		4.162		4.288		CONT.	CONT.	
Remarks:												
Support	WR/RCP	Miscellaneous	1.060	0.000		0.000		0.000		CONT.	CONT.	
			0.000									
			1.060	0.000		0.000		0.000		CONT.	CONT.	
Remarks:												
Test & Evaluation	WR/RCP	Miscellaneous	0.000	0.000		0.000		0.000		CONT.	CONT.	
			0.000									
Subtotal T&E			0.000	0.000		0.000		0.000		CONT.	CONT.	
Remarks:												
Program Management Support	WR/RCP	Miscellaneous	4.945	0.180		0.000		0.012		CONT.	CONT.	
			0.000									
Subtotal Management			4.945	0.180		0.000		0.012		CONT.	CONT.	
Remarks:												
Total Cost			26.277	4.062		4.162		4.300		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No.111-13 of 111-13

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 13 of 13)

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <div>June 2001</div>			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	2.387	0.270	1.001						Continuing	Continuing
LPD 17 Class Systems Integration/22283	2.387	0.270	1.001						Continuing	Continuing
Quantity of RDT&E Articles										
<div>A. Mission Description and Budget Item Justification: The 12 LPD 17 Class ships are functional replacements for 41 ships of four classes of amphibious ships. These new ships embark, transport, and land elements of Marine landing forces in an amphibious assault by helicopters, landing craft, and amphibious vehicles. Tactics, techniques, and tools for naval expeditionary warfare continue to evolve. The LPD 17 Class configuration must continue to adapt to this evolutionary process, because these ships are expected to be in service until almost 2050. The LPD 17 design includes systems configurations that reduce operating and support costs and facilitate operational performance improvements. System engineering and integration efforts that began in FY 1997 will develop further reductions in life cycle costs and will integrate performance upgrades in a rapid, affordable manner. Possible improvements include composite masts, advanced sensors, advanced computers, advanced command and control software, advanced information systems technologies, and ship based logistics concepts. Cost reduction and improved performance will be accomplished through sustained modeling and simulation efforts, continued personnel reductions efforts, system performance tradeoff evaluation, and naval expeditionary warfare systems engineering. Feedback from the operational forces for integrating system configurations will be accomplished through the Naval Expeditionary Warfare Centers in Quantico, Dahlgren, and Little Creek, Virginia. These efforts will result in well-defined specifications and drawings in system integration design packages that provide technical baselines for follow-on ship procurements. In addition, these efforts include the Live Fire Test & Evaluation (LFT&E) and Operational Evaluation (OPEVAL) tests required for the lead ship. This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end items prior to production approval decision.</div> <div>(U) Program Accomplishments and Plans: FY 2000 Accomplishments: - (U) (2.387) Continued naval expeditionary warfare systems engineering efforts. Continued live fire test and operational evaluation efforts.</div>										

R-1 SHOPPING LIST - Item No. 112-1 OF 112-5

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 5)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001																																																				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5							R-1 ITEM NOMENCLATURE LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N																																																				
<p>FY 2001 Plan:</p> <ul style="list-style-type: none"> - (U) (.270) Continue naval expeditionary warfare systems engineering efforts. Continue live fire test and operational evaluation efforts. - (U) (.003) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>FY 2002 Plan:</p> <ul style="list-style-type: none"> - (U) (1.001) Continue naval expeditionary warfare systems engineering efforts. Continue live fire test and operational evaluation efforts. <p>B. Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">2.608</td> <td style="text-align: right;">0.273</td> <td style="text-align: right;">1.012</td> </tr> <tr> <td>(U) Appropriated Value:</td> <td style="text-align: right;">2.608</td> <td style="text-align: right;">0.273</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>(U) Adjustments to FY 2002/2001 Appropriated Value</td> <td style="text-align: right;">-0.221</td> <td style="text-align: right;">-0.003</td> <td style="text-align: right;">-0.011</td> </tr> <tr> <td style="padding-left: 20px;">FY 2001 President's Budget</td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) FY 2002 PRES. Budget Submit:</td> <td style="text-align: right;">2.387</td> <td style="text-align: right;">0.270</td> <td style="text-align: right;">1.001</td> </tr> </tbody> </table> <p>Funding: FY00 changes reflect -138k for program adjustment, -88k for congressional undistributed. FY01 change reflects congressional undistributed -3k FY02 change reflects minor pricing adjustments -11k</p> <p>Schedule: Not applicable. Technical: Not applicable.</p> <p>C. Other Program Funding Summary (\$ in millions)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: right;">Prior Year</th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> <th style="text-align: right;">FY 2006</th> <th style="text-align: right;">FY 2007</th> <th style="text-align: right;">To Complete</th> <th style="text-align: right;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>SCN Line 3036</td> <td style="text-align: right;">1725.0</td> <td style="text-align: right;">1,500.0</td> <td style="text-align: right;">556.0</td> <td style="text-align: right;">421.3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">Continuing</td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table>													FY 2000	FY 2001	FY 2002	(U) FY 2001 President's Budget:	2.608	0.273	1.012	(U) Appropriated Value:	2.608	0.273	0.000	(U) Adjustments to FY 2002/2001 Appropriated Value	-0.221	-0.003	-0.011	FY 2001 President's Budget				(U) FY 2002 PRES. Budget Submit:	2.387	0.270	1.001		Prior Year	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	SCN Line 3036	1725.0	1,500.0	556.0	421.3						Continuing	Continuing
	FY 2000	FY 2001	FY 2002																																																								
(U) FY 2001 President's Budget:	2.608	0.273	1.012																																																								
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SCN Line 3036	1725.0	1,500.0	556.0	421.3						Continuing	Continuing																																																

R-1 SHOPPING LIST - Item No. 112-2 OF 112-5

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 5)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N	
<p>RELATED RDT&E: PE 0604567N Ship Contract Design/Live Fire T&E</p> <p>D. Acquisition Strategy: Competitive</p>		
	FY 2000	FY 2001
Program Milestones	2Q - Program Review	
Engineering Milestones	4Q - Production Readiness Review	2Q - Vulnerability Assessment Report
T&E Milestones	2Q - Begin OT-IIB	3Q - Complete OT-IIB
Contract Milestones	2Q - Follow on Contract Awarded	

R-1 SHOPPING LIST - Item No. 112-3 OF 112-5

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 3 of 5)

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			PE#0604311N - 22283			LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Systems Engineering and Integration	Various	Various	0.467	0.985	11/99	0.000		0.000		Continuing	Continuing	
Subtotal Product Development			0.467	0.985		0.000		0.000		Continuing	Continuing	
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 112-4 OF 112-5

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 4 of 5)

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N			PROGRAM ELEMENT PE#0604311N - 22283			PROJECT NAME AND NUMBER LPD 17 CLASS SYSTEM INTEGRATION AND DEVELOPMENT - 0604311N						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0.800	1.402	11/99	0.270	11/00	1.001	11/01	Continuing	Continuing	
Subtotal T&E			0.800	1.402		0.270		1.001		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Total Cost			1.267	2.387		0.270		1.001		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 112-5 OF 112-5

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 5)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification									DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-05						R-1 ITEM NOMENCLATURE 0604312N Tri-Service Standoff Attack Missile (TSSAM)					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	7.006	1.913	3.503	1.946							
A2242 Joint Air to Surface Standoff Missile (JASSM)	7.006	1.913	3.503	1.946							
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Joint Air to Surface Standoff Missile (JASSM) program is a FY-96 new start follow-on weapon system to the canceled Tri-Service Standoff Attack Missile (TSSAM). It is a joint Air Force/Navy program. JASSM is a long range, conventional air-to-surface, autonomous precision guided, standoff cruise missile compatible with fighter and bomber aircraft and able to attack a variety of fixed and relocatable targets. JASSM will carry a 1,000 pound class penetrator warhead. Initial integration efforts will be on the B-52 and F-16. The F/A 18 E/F, C/D, S-3, P-3 and JSF are currently designated as Navy objective platforms for JASSM. Carrier Operability is one of the Key Performance Parameters (KPP) for JASSM. The budget covers only the cost of Navy unique testing required to meet the Carrier Operability KPP. The Navy has not made a procurement decision with regards to the JASSM missile and R&D funding currently ends after FY02. In FY01, \$1.500 million was added to support Carrier Operability in preparation for the 1Q 02 LRIP decision.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY:</p> <p>This program is funded under ENGINEERING and MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p> <p>*Note: FY2000 and prior year funding shown under Project Unit E2242.</p>											

R-1 SHOPPING LIST - Item No. 113

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EXHIBIT R-2a, RDT&E Project Justification									DATE:			
									June 2001			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-05		0604312N TSSAM				A2242 JASSM						
COST (\$ in Millions)		Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		7.006	1.913	3.503	1.946							
RDT&E Articles Qty Not Applicable												
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Joint Air to Surface Standoff Missile (JASSM) program is a FY-96 new start follow-on weapon system to the canceled Tri-Service Standoff Attack Missile (TSSAM). It is a joint Air Force/Navy program. JASSM is a long range, conventional air-to-surface, autonomous precision guided, standoff cruise missile compatible with fighter and bomber aircraft and able to attack a variety of fixed and relocatable targets. JASSM will carry a 1,000 pound class penetrator warhead. Initial integration efforts will be on the B-52 and F-16. The F/A 18 E/F, C/D, S-3, P-3 and JSF are currently designated as Navy objective platforms for JASSM. Carrier Operability is one of the Key Performance Parameters (KPP) for JASSM. The budget covers only the cost of Navy unique testing required to meet the Carrier Operability KPP. The Navy has not made a procurement decision with regards to the JASSM missile and R&D funding currently ends after FY02. In FY01, \$1.500 million was added to support Carrier Operability in preparation for the 1Q 02 LRIP decision.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS: *(Funded under PU E2242)</p> <ul style="list-style-type: none"> - (U) (\$0 - Air Force Funded) Launched first powered JASSM Flight Test Vehicle, JASSM FTV-3 (Nov 99) - (U) (\$0.550) Funded Lockheed Martin CLIN 1002 for Navy Carrier Operability unique requirements. - (U) (\$1.363) Continued Carrier Operability and ship suitability testing. <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$0.410) Lockheed Martin CLIN 1002 for Navy Carrier Operability unique requirements. - (U) (\$3.084) Continued Carrier Operability and ship suitability testing (E3 Testing, Load Adapter Development, Cats/Traps Flight Clearance). -(U) (\$0.009) Small Business Innovative Research Assessment. <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$0.200) Lockheed Martin CLIN 1002 for Navy Carrier Operability unique requirements. - (U) (\$1.746) Continued Carrier Operability and ship suitability testing (Qual Navy Load Adapter). 												

R-1 SHOPPING LIST - Item No. 113

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 6)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05	PROGRAM ELEMENT NUMBER AND NAME 0604312N TSSAM	PROJECT NUMBER AND NAME A2242 JASSM

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	2.020	2.024	1.986
(U) Adjustments from the President's Budget:	-0.107	1.479	-0.040
(U) FY 2002 President's Budget Submit:	1.913	3.503	1.946

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 net decrease of \$0.107 million reflects a \$0.088 million decrease for a Small Business Innovative Research (SBIR) assessment , a \$.008 million decrease for a Congressional Recission, and a \$.011 million decrease for a Repriorization of Requirements within the Navy. The FY 2001 net increase of \$1.479 million is due to a \$1.500 million increase to support Carrier Operability testing, a \$.003 million decrease for a Reprioritization of Requirements within the Navy, a \$.014 million decrease for a Congressional Reduction, and a \$.004 million decrease for a Congressional Recission. The FY 2002 net decrease of \$.040 million is due to a \$.007million decrease for a Reprioritization of Requirements within the Navy and a \$.033 million decrease for Economic Assumptions.

(U) Schedule: II schedules are JASSM joint service program changes and are not Navy specific. Following the FTV-1 failure/analysis and concerns with some subcontractor hardware deliveries, the EMD program has gone through a modification. An additional 10 months have been added to EMD, which began in Nov 1998 and now runs for 50 months, resulting in a one-year slip of IOT&E; Low Rate Initial Production (LRIP) award has also moved 10 months from 3Q/01 to 1Q/02.

(U) Technical: Not Applicable.

* Funding in FY2000 was under PU E2242

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 3 of 6)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-05	0604312N TSSAM	A2242 JASSM	
(U) D. ACQUISITION STRATEGY: The Navy has not made a procurement decision regarding JASSM.			
(U) E. SCHEDULE PROFILE: The schedule provided below contains major program milestones as well as specific Navy Carrier Operability events necessary for LRIP and MS III.			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) Program Milestones			1Q LRIP Decision/Award
(U) Engineering Milestones			2Q B-52 Flight Cert
(U) T&E Milestones	1Q Begin Contractor DT/OT	2Q Begin DT/OT - Navy JASSM E3 Tests	2Q F/A-18E/F Cats/Traps 2Q Begin IOT&E - OT&E Readiness Certification
(U) Contract Milestones			
*LRIP and Lot quantities funded by USAF.			

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 4 of 6)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-05			PROGRAM ELEMENT 0604312N TSSAM			PROJECT NUMBER AND NAME A2242 JASSM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
AoA/Carrier Operabilit/Ship Suitability	WR	NAWC-WD	1.340	0.895	10/01	0.500	10/02					
SLAM-ER CARD Dev to Spt AoA	WR	NAWC-WD	0.300									
SLAM-ER/JASSM AoA Spt	SS/CPFF	Boeing thru PMA-258	1.600									
Carrier Operability/Ship Suitability	Misc	Various	3.716	2.189	10/01	1.246	Various					
Navy CLIN 1002	CPAF	Lockheed	1.702	0.370	10/01	0.175	10/02					
Small Business Innovative Research				0.009								
Award Fees			0.261	0.040	05/01	0.025	03/02					
Subtotal Product Development			8.919	3.503		1.946						
<p>Remarks: Work performed for SLAM-ER/JASSM AoA Support and SLAM-ER CARD Development was a one-time resource sponsor directed action for increased Navy participation in the JASSM Analysis of Alternatives process. PMA-258 conducted the actual comparative analysis between JASSM and SLAM-ER. All efforts reflected in Product Development are in support of JASSM Carrier Operability, which is a Key Performance Parameter. This effort is Navy unique. No Navy aircraft integration efforts or mission planning functions are funded in this line. All other JASSM efforts are being funded by the Air Force as the executive service.</p>												
Subtotal Support			0.000	0.000		0.000						
<p>Remarks:</p>												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-05			0604312N TSSAM			A2242 JASSM						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E			0.000	0.000		0.000						
Remarks:												
Subtotal Management			0.000	0.000		0.000						
Remarks:												
Total Cost			8.919	3.503		1.946						
Remarks:												

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EXHIBIT R-2, RDT&E Budget Item Justification					DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5				R-1 ITEM NOMENCLATURE Standard Missile Improvements PE 0604366N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002						
Total PE Cost	0.625	1.183	1.309						
Standard Missile Improvements/K0439	0.625	1.183	1.309						
Quantity of RDT&E Articles									

A. Mission Description and Budget Item Justification:
 (Project K0439) STANDARD Missile fuze and guidance performance degrades when the target is in close proximity to the sea surface. The low altitude improvement program will improve performance against low and very low altitude targets. This capability is currently being developed for AEGIS ships. An effort is underway to improve performance of the MK 45 Target Detecting Device (TDD) against advanced threats and replace the MK 45 MODs 9 and 11 in future production missiles (SM-2 BLOCKS I and IVA). Funding for this effort is shared with other funding lines, including Conventional Munitions, P.E. 0603609N, Project K1821.

(U) PROGRAM PLANS AND ACCOMPLISHMENTS:

1. (U) FY 2000 ACCOMPLISHMENTS:
 - (U) (\$0.625) Completed critical design and development of MK 45 MOD 12/14 TDD hardware and software.

2. (U) FY 2001 PLAN:
 - (U) (\$1.151) Continue MK 45 MOD 12/14 TDD development.
 - (U) (\$0.032) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2002 PLAN:
 - (U) (\$1.309) Continue MK 45 MOD 12/14 TDD development.

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Exhibit R-2, RDT&E Budget Item Justification
 (Exhibit R-2, page 1 of 4)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001																					
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE																					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5		Standard Missile Improvements/PE 0604366N																					
<p>B. Other Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%; text-align: right;">FY 2000</th> <th style="width: 15%; text-align: right;">FY 2001</th> <th style="width: 15%; text-align: right;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget Submit:</td> <td style="text-align: right;">1.134</td> <td style="text-align: right;">1.194</td> <td style="text-align: right;">1.315</td> </tr> <tr> <td>(U) Appropriated Value:</td> <td style="text-align: right;">1.140</td> <td style="text-align: right;">1.194</td> <td></td> </tr> <tr> <td>(U) Adjustments to FY2000/2001 Appropriated Value/ FY2001 President's Budget:</td> <td style="text-align: right;">-0.515</td> <td style="text-align: right;">-0.011</td> <td style="text-align: right;">-0.006</td> </tr> <tr> <td>(U) FY 2002 PRES Budget Submit:</td> <td style="text-align: right;">0.625</td> <td style="text-align: right;">1.183</td> <td style="text-align: right;">1.309</td> </tr> </tbody> </table> <p style="margin-top: 10px;">Funding: FY00 change due to SBIR (-\$0.029), transfer to the cancelled accounts to pay an REA (-\$0.503), Congressional proportionate rescission (-\$0.004), various minor midyear adjustments (+\$0.021). FY01 decrease is due to pro rata reduction (-\$0.008), Government-Wide rescission (-\$0.003). FY02 change due to minor adjustment during POM (-\$0.002), NWCF rates (-\$0.010), Inflation adjustment (+\$0.006).</p> <p>Schedule: Not Applicable. Technical: Not Applicable.</p> <p>C. Other Program Funding Summary: Not applicable.</p> <p>D. Acquisition Strategy: Not applicable.</p> <p>E. Schedule Profile: Not applicable.</p>					FY 2000	FY 2001	FY 2002	(U) FY 2001 President's Budget Submit:	1.134	1.194	1.315	(U) Appropriated Value:	1.140	1.194		(U) Adjustments to FY2000/2001 Appropriated Value/ FY2001 President's Budget:	-0.515	-0.011	-0.006	(U) FY 2002 PRES Budget Submit:	0.625	1.183	1.309
	FY 2000	FY 2001	FY 2002																				
(U) FY 2001 President's Budget Submit:	1.134	1.194	1.315																				
(U) Appropriated Value:	1.140	1.194																					
(U) Adjustments to FY2000/2001 Appropriated Value/ FY2001 President's Budget:	-0.515	-0.011	-0.006																				
(U) FY 2002 PRES Budget Submit:	0.625	1.183	1.309																				

R-1 Item No. 114

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 4)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			Standard Missile Improvements 0604366N			Standard Missile Improvements K0439; ADSAM Demo K2639; Optical Correlator K2640						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Design and Analysis	WR	NSWC/Dahlgren	785.484								785.484	
	SS/CPAF	Raytheon	1.616	0.527	06/00	1.183	11/00	1.309	11/00	0.000	Continuing	
	WR	Chief of Naval Office	0.010							0.000	0.010	
	PD	Cruise Missiles Defense Prog	4.795							0.000	4.795	
	WR	NSWC/PHD	0.000	0.030						0.030	0.030	
	WR	NSWC/IH	0.000	0.049						0.049	0.049	
Subtotal Product Development			791.905	0.606		1.183		1.309		Continuing	Continuing	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 Item No. 114

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 3 of 4)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			Standard Missile Improvements 0604366N			Standard Missile Improvements K0439; ADSAM Demo K2639; Optical Correlator K2640						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	FFP	Techmatics		0.019	03/00					0.019	0.019	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.019		0.000		0.000		0.000	0.019	
Remarks:												
Total Cost			791.905	0.625		1.183		1.309		Continuing	Continuing	
Remarks:												

R-1 Item No. 114

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 4 of 4)

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
							June 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5					Airborne Mine Countermeasures / 0604373N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	51.103	50.842	52.041						0.000	298.387
Airborne Mine Hunt Systems/ Q0529	15.140	17.804	8.747						0.000	173.763
ALMDS / Q2047	19.258	17.978	14.073						0.000	55.983
OASIS/ Q2427	3.750	7.112	11.635						0.000	28.217
AMNS / Q2473	12.955	7.948	17.586						0.000	40.424
Quantity of RDT&E Articles										
A. Mission Description and Budget Item Justification: This program develops airborne mine countermeasures systems that are required to counter known and projected mine threats. It provides a capability to locate pressure-combination and sweep resistant mines at greater coverage rates and by more rapidly deployable means. It also provides a non-acoustic mine detection and classification capability against floating and tethered mines using Light Detection and Ranging (LIDAR) techniques. Cable improvements will provide higher reliability, longer life and higher current capacity. This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items and MH-60S integration prior to production approval decision.										
B. Program Change Summary			FY 2000	FY 2001	FY 2002					
FY 2001 President's Budget:			52.351	47.312	57.529					
Appropriated Value:			52.642	51.312						
Adjustment to FY 2000/2001 Appropriated Value/										
FY 2001 President's Budget:			-1.539	-0.470	-5.488					
FY 2002 President's Budget Submit :			51.103	50.842	52.041					
Funding: FY00 reflects decreased funding due to SBIR (-\$.835M), proportionate Congressional rescission (-\$.206M), and general execution reductions (-\$.498M). FY01 reflects: SWIMS project, \$3.000M, Congressional increase for remote technical assistance support to deploying MCM ships; Mine Hunting project, \$1.000M, Congressional add for AQS-20 sonar data recording capability; and decreased funding of (-\$.359M) due to Congressional .7% Pro-rata reduction and (-\$.111M) Government-Wide rescission . FY02 reflects decreased funding for the ALMDS EMD effort (+\$4.1M), Restructure for OASIS (-\$1.9M), Re-host AMNS Software (+\$9.M), Restructure for RAMICS program (-\$9.8M) , inflation adjustment (+\$.122M), low expenditure rate (-\$6.659M) and NWCF rate changes (-\$.351).										
Schedule: The OASIS program was restructured which extends Milestone III, shifting from FY03 to FY04. The RAMICS program was restructured which extends Milestone III from FY05 to FY06.										
Technical: N/A										

R-1 SHOPPING LIST - Item No. 115 - 1 of 115 - 25

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 25)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N				PROJECT NAME AND NUMBER Airborne Mine Hunt Systems/Q0529					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	15.140	17.804	8.747						Continuing	Continuing
RDTE&E Articles Qty	2									
<p>A Mission Description and Budget Item Justification This project includes a sonar for mine detection, classification and identification. The Navy does not possess a capability to conduct high speed minefield reconnaissance to determine mine density and location. The AN/AQS-20/X is being developed to address the emergent requirement for mine identification and to integrate AMCM systems with a CH-60S platform. The AN/AQS-20/X will also be the minehunting sonar component for the Remote Minehunting System (RMS). The AN/AQS-20/X will be developed to meet the capabilities with the Organic MCM platforms. The Laser Line Scan System (LLSS) provides interim identification capability to the AQS-14A minehunting system.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS</p> <ul style="list-style-type: none"> - (U) (\$2.306) LLSS – Continued integration into the AN/AQS-14A and demonstrated the LLSS. - (U) (\$5.454) AN/AQS-20/X – Began MH-60S conversion of AQS-20/X. - (U) (\$7.380) AN/AQS-20/X – Continued ID sensor design and engineering, contract awarded, completed PDR. <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$10.518) AN/AQS-20/X – Complete fabrication/integration of EDMs, delivery of one EDM. - (U) (\$4.017) AN/AQS-20/X – Complete Critical Design Review. - (U) (\$1.055) LLSS – Complete modification of the AQS-14. - (U) (\$909) LLSS – Development of support equipment and publications. - (U) (\$991) AN/AQS-20/X – Sonar Data Recording Capability (Cong Add) - (U) (\$314) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 										

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EXHIBIT R-2a, RDT&E Project Justification				DATE:	
				June 2001	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER		PROJECT NAME AND NUMBER	
RDT&E, N , BA-5		Airborne Mine Countermeasures/0604373N		Airborne Mine Hunt Systems/Q0529	
<p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"> (U) (\$2.805) AN/AQS-20/X – Complete delivery of EDMs, conduct Tow Test and Contractor Demonstration. (U) (\$5.942) AN/AQS-20/X - Conduct TECHEVAL/OPEVAL. 					
B. Other Program Funding Summary					
	FY 2000	FY 2001	FY 2002	To Complete	Total Cost
OPN 424800					
AQS-20	22.094	23.645	22.425	Continuing	Continuing
AN/AQS-14A LLSS	0.000	4.263	0.000	Continuing	Continuing
AQS-20/X	0.000	0.000	0.000	Continuing	Continuing
C. Acquisition Strategy: Procured two (2) RMS LRIP systems in FY00 to be provided to RMS program (63502N/Q0260) as GFE. Starting in FY01 procure six (6) LRIP MH-53E systems. FY00 RDT&E starts the evolution of the AQS-20 to the AN/AQS-20/X with ID capability and integrates it to the CH-60S and RMS platforms.					
FY01 provides for procurement of four (4) systems AN/AQS-14A with LLSS.					
D. Schedule Profile: See attached.					

R-1 SHOPPING LIST - Item No. 115 - 3 of 115 - 25

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 3 of 25)

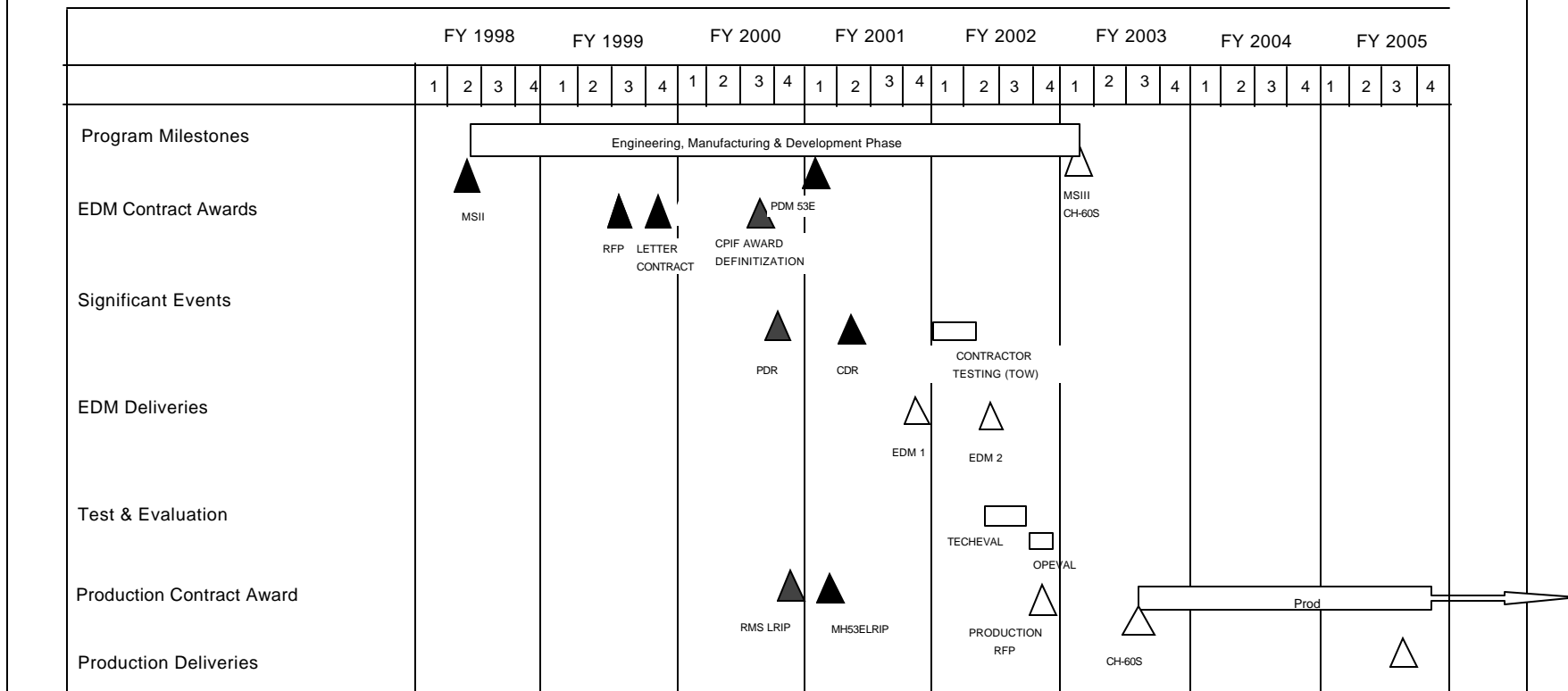
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER	
RDT&E, N , BA-5	Airborne Mine Countermeasures/0604373N			Airborne Mine Hunt Systems/Q0529	

AN/AQS-20/X Schedule



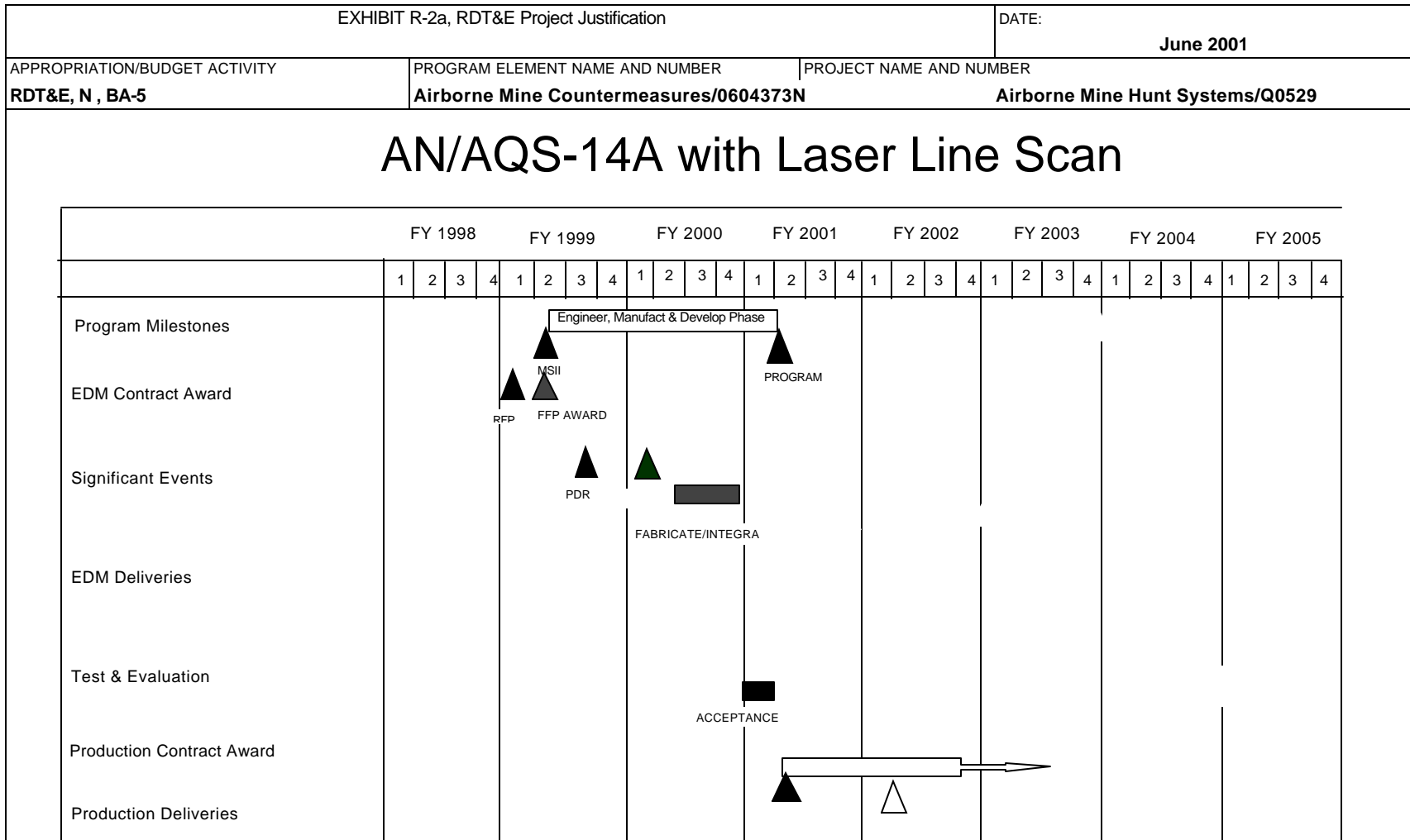
R-1 SHOPPING LIST - Item No. 115 - 4 of 115 - 25

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 25)

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R-1 SHOPPING LIST - Item No. 115 - 5 of 115 - 25

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 5 of 25)

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Hunt Systems/Q0529						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development											0.000	
Hardware/Software Development	C/CPIF	Raytheon, RI	57.831	7.120	06/00	13.280	02/01				78.231	
Hardware/Software Development	C/FP	Lockheed, NY	4.572								4.572	
Hardware/Software Development	WR	CSS Panama City, FL	2.666	2.300	10/99	0.407	10/00				5.373	
Hardware/Software Development	C/FFP	Northrup Grumman, MD				1.073	12/00				1.073	
Subtotal Hardware/Software Development			65.069	9.420		14.760		0.000		0.000	89.249	
Remarks:												
Engineering Services												
Engineering Services	WR	CSS Panama City, FL	14.519	1.934	10/99	0.572	10/00				17.025	
Engineering Services	SS/CPIF	Raytheon, RI	1.500			0.991	03/01				2.491	
Engineering Services	VAR	Various	38.407								38.407	
Engineering Services	C/CPFF	Raytheon, RI		1.500	1/00						1.500	
Subtotal Engineering Services			54.426	3.434		1.563		0.000		0.000	59.423	
Remarks:												

R-1 SHOPPING LIST - Item No. 115 - 6 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 25)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5			PROGRAM ELEMENT Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Airborne Mine Hunt Systems/Q0529						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Management Support												
Management Support	VAR	Various	8.601	0.390	10/99	0.393	10/00	0.148	10/01	Continuing	Continuing	
Travel			0.071	0.090		0.090		0.060		Continuing	Continuing	
Subtotal Management Support			8.672	0.480		0.483		0.208		Continuing	Continuing	
Remarks:												
Test & Evaluation and ILS Functions												
T&E Functions	WR	CSS Panama City	1.848					5.739	10/01	Continuing	Continuing	
T&E Functions	C/CPIF	Raytheon						2.800	10/01	Continuing	Continuing	
T&E Functions	VAR	Various		0.200	10/99					Continuing	Continuing	
ILS Functions	WR	CSS Panama City	2.057	1.606	10/99	0.998	10/00			Continuing	Continuing	
Subtotal T&E and ILS Functions			3.905	1.806		0.998		8.539		Continuing	Continuing	
Remarks:												
Total Cost			132.072	15.140		17.804		8.747		0.000	148.672	

R-1 SHOPPING LIST - Item No. 115 - 7 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 25)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N					PROJECT NAME AND NUMBER Airborne Laser Mine Detection Systems/Q2047				
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	19.258	17.978	14.073						Continuing	Continuing
RDT&E Articles Qty		3								
<p>A. Mission Description and Budget Item Justification</p> <p>Airborne Laser Mine Detection Systems (ALMDS), AN/AES-1 is a light detection and ranging (LIDAR) system for rapid detection, classification, and localization of floating and near surface tethered mines. It will be deployed on the MH-60S as part of the OAMCM suite of systems.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS</p> <ul style="list-style-type: none"> - (U) (\$2.713) Achieved MSII. - (U) (\$12.265) Awarded EDM contract and initiated hardware and software design/systems engineering. - (U) (\$2.133) Began ILS. - (U) (\$2.147) Started performance model baselining and platform integration analyses (combat system coordination). <p>2. (U) FY 2001 PLANS</p> <ul style="list-style-type: none"> - (U) (\$5.897) Complete preliminary design (conduct PDR) and final design (conduct CDR). - (U) (\$8.437) Begin building EDMs and software coding. - (U) (\$0.650) Continue performance model baselining. - (U) (\$1.516) Continue ILS. - (U) (\$1.007) Complete platform integration analyses (combat system coordination). - (U) (\$0.471) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 										

R-1 SHOPPING LIST - Item No. 115 - 8 of 115 - 25

Exhibit R-2a, RDT&E Project Justification
 (Exhibit R-2a, page 8 of 25)

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EXHIBIT R-2a, RDT&E Project Justification				DATE: June 2001																			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER		PROJECT NAME AND NUMBER																			
RDT&E, N , BA-5		Airborne Mine Countermeasures/0604373N		Airborne Laser Mine Detection Systems/Q2047																			
<p>3. (U) FY 2002 PLANS</p> <ul style="list-style-type: none"> - (U) (\$11.698) Continue building EDMs and software coding. - (U) (\$0.383) Complete performance model baselining. - (U) (\$1.992) Continue ILS. <p>B. Other Program Funding Summary</p> <table style="width: 100%; margin-top: 20px;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 10%;">FY 2000</th> <th style="width: 10%;">FY 2001</th> <th style="width: 10%;">FY 2002</th> <th style="width: 15%; text-align: center;">To Complete</th> <th style="width: 10%; text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ALMDS</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: Milestone II was accomplished April 2000 and ALMDS EDM contract was awarded April 2000 by competition. In FY04 the EMD program will use OPN funding to refurbish EDM systems (3) for fleet use. Full and open competition is planned for ALMDS procurement in FY05.</p> <p>D. Schedule Profile: See attached.</p>							FY 2000	FY 2001	FY 2002	To Complete	Total Cost	OPN 424800						ALMDS	0	0	0	CONT.	CONT.
	FY 2000	FY 2001	FY 2002	To Complete	Total Cost																		
OPN 424800																							
ALMDS	0	0	0	CONT.	CONT.																		

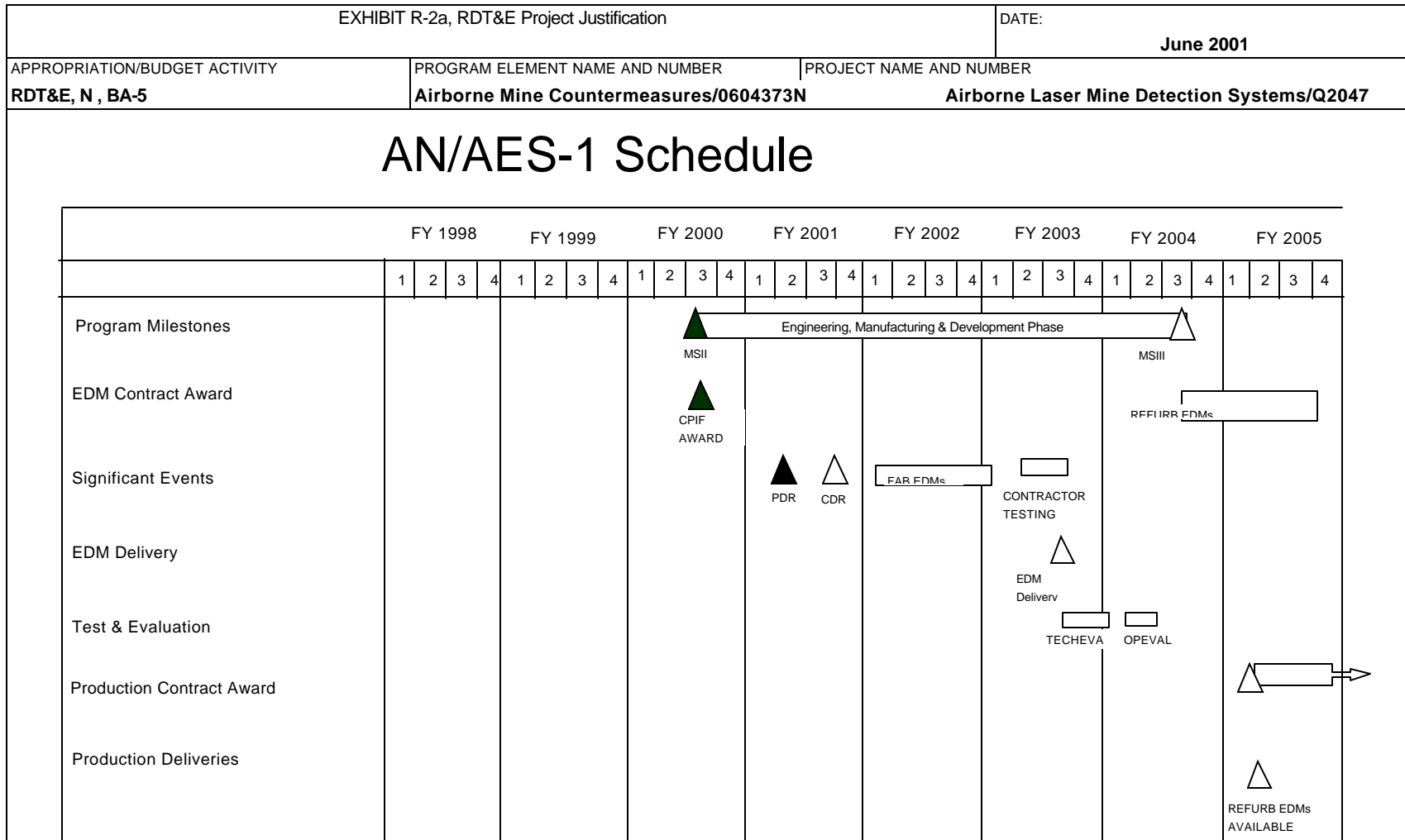
R-1 SHOPPING LIST - Item No. 115 - 9 of 115 - 25

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 9 of 25)

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R-1 SHOPPING LIST - Item No. 115 -10 of 115 - 25

Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 10 of 25)

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Laser Mine Detection Systems/Q2047						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY00 Cost	FY 00 Award Date	FY01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	WR	CSS, Panama City	0.365	0.025	11/99	0.050	11/00	0.075	11/01	Cont.	Cont.	
Hardware/Software Development	RCP	CSS (Prime-Northrop Grum)		7.869	04/00	7.718	11/00	4.063	11/01	Cont.	Cont.	
Hardware/Software Development	RCP	Metron		0.225	11/99	0.200	11/00	0.200	11/01	Cont.	Cont.	
Subtotal Hardware/Software Development			0.365	8.119		7.968		4.338		Cont.	Cont.	
Remarks:												
Engineering Services	WR	CSS, Panama City	3.701	1.257	11/99	1.007	11/00	1.220	11/01	Cont.	Cont.	
Engineering Services	WR	NRL Stennis	0.079	0.060	11/99	0.060	11/00	0.062	11/01	Cont.	Cont.	
Engineering Services	RCP	CSS (Prime-Northrop Grum)		2.923	04/00	2.774	11/00	0.917	11/01	Cont.	Cont.	
Engineering Services	RCP	CSS, Panama City		0.075	11/99					Cont.	Cont.	
Engineering Services	RCP	Metron		0.480	11/99	0.165	11/00	0.140	11/01	Cont.	Cont.	
Engineering Services	RCP	NRL Stennis		0.330	11/99	0.200	11/00	0.180	11/01	Cont.	Cont.	
Engineering Services	VAR	VARIOUS		0.275	11/99	0.225	11/00	0.225	11/01	Cont.	Cont.	
Subtotal Engineering Services			3.780	5.400		4.431		2.744		Cont.	Cont.	
Remarks:												

R-1 SHOPPING LIST - Item No. 115 - 11 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 11 of 25)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Laser Mine Detection Systems/Q2047						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY00 Cost	FY 00 Award Date	FY01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Management Support	WR	NRL Stennis	0.055								0.055	
Management Support	RCP	CSS (Prime-Northrop Grum)		0.893	04/00	0.807	11/00	0.870	11/01	Cont.	Cont.	
Management Support	RCP	Metron		0.110	11/99	0.135	11/00	0.160	11/01	Cont.	Cont.	
Management Support	RCP	NRL Stennis		0.100	11/99	0.220	11/00	0.220	11/01	Cont.	Cont.	
Management Support	VAR	Various	0.042	2.433	11/99	2.718	11/00	2.851	11/01	Cont.	Cont.	
Management Support		Travel	0.050	0.050	11/99	0.050	11/00	0.050	11/01	Cont.	Cont.	
Subtotal Management Support			0.147	3.586		3.930		4.151		Cont.	Cont.	
Remarks:												
T&E Functions	WR	CSS, Panama City	0.084	0.020	11/99					5.975	6.079	
T&E Functions	RCP	CSS (Prime-Northrop Grum)				0.133	11/00	0.848	11/01	Cont.	Cont.	
Subtotal T&E Functions			0.084	0.020		0.133		0.848		Cont.	Cont.	
Remarks:												
ILS Functions	WR	CSS, Panama City	0.132	0.085	11/99	0.292	11/00	0.362	11/01	1.264	2.135	
ILS Functions	RCP	CSS (Prime-Northrop Grum)		1.853	04/00	1.023	11/00	1.405	11/01	2.417	6.698	
ILS Functions	RCP	NRL Stennis		0.170	11/99	0.176	11/00	0.200	11/01	0.250	0.796	
ILS Functions	VAR	Various	0.166	0.025	11/99	0.025	11/00	0.025	11/01	0.050	0.291	
Subtotal ILS Functions			0.298	2.133		1.516		1.992		3.981	9.920	
Remarks:												
Total Cost			4.674	19.258		17.978		14.073		3.981	9.920	
Remarks:												

R-1 SHOPPING LIST - Item No. 115 - 12 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 12 of 25)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5		PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373M			PROJECT NAME AND NUMBER Organic Airborne and Surface Influence Sweep/Q2427					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	3.750	7.112	11.635							Cont.
RDT&E Articles Qty		3								
<p>A. Mission Description and Budget Item Justification The Organic Airborne & Surface Influence Sweep (OASIS), formerly SWIMS, will provide a self-contained, high speed, multi-influence mine sweep capability, towed by the organic CH60S helicopter and potential surface craft.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS</p> <ul style="list-style-type: none"> - (U) (\$3.133) Completed Analysis of Alternatives (AOA) and developed performance specifications for EDM contract, SOW, CDRLs. - (U) (\$.300) Completed TEMP Development. - (U) (\$.317) Completed Concept Feasibility Test and Evaluation. <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$.918) Conduct evaluation of EDM contract proposals. - (U) (\$1.500) Award competitive EDM contract for engineering design and EDM fabrication. - (U) (\$1.163) Monitor contractor performance, technical review of CDRLs and conduct PDR - (U) (\$.475) Conduct technical studies, i.e., CH-60 interface, concept of employment shock analysis, C4I /MEDAL interface, and Environmental Analysis. - (U) (\$2.972) Conduct remote technical assistance to MCM ship (Cong Add) - (U) (\$.84) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 										

R-1 SHOPPING LIST - Item No. 115 - 13 of 115 - 25

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification				DATE: June 2001																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N		PROJECT NAME AND NUMBER Organic Airborne and Surface Influence Sweep/Q2427																				
<p>3. (U) FY 2002 PLAN</p> <ul style="list-style-type: none"> - (U) (\$6.962) Continue EDM contract to complete Design, Conduct CDR, Fabricate 3 EDM, and begin to integrate EDMs into platform. - (U) (\$4.673) Support platform integration, prepare for Demo/DT Test Program. <p>B. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">FY 2000</th> <th style="width: 10%;">FY 2001</th> <th style="width: 10%;">FY 2002</th> <th style="width: 10%; text-align: center;">To Complete</th> <th style="width: 10%; text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OASIS</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: Following an Analysis of Alternatives in FY00, a CPIF EDM contract will be awarded using full and open competition. FY03 RDT&E test articles with be of a production proofing models delivered in time to satisfy the CH-60S FY05 intergration date. Full and open competition is planned for the OASIS procurement in FY05.</p> <p>D. Schedule Profile: See attached.</p>							FY 2000	FY 2001	FY 2002	To Complete	Total Cost	OPN 424800						OASIS	0.000	0.000	0.000	CONT.	CONT.
	FY 2000	FY 2001	FY 2002	To Complete	Total Cost																		
OPN 424800																							
OASIS	0.000	0.000	0.000	CONT.	CONT.																		

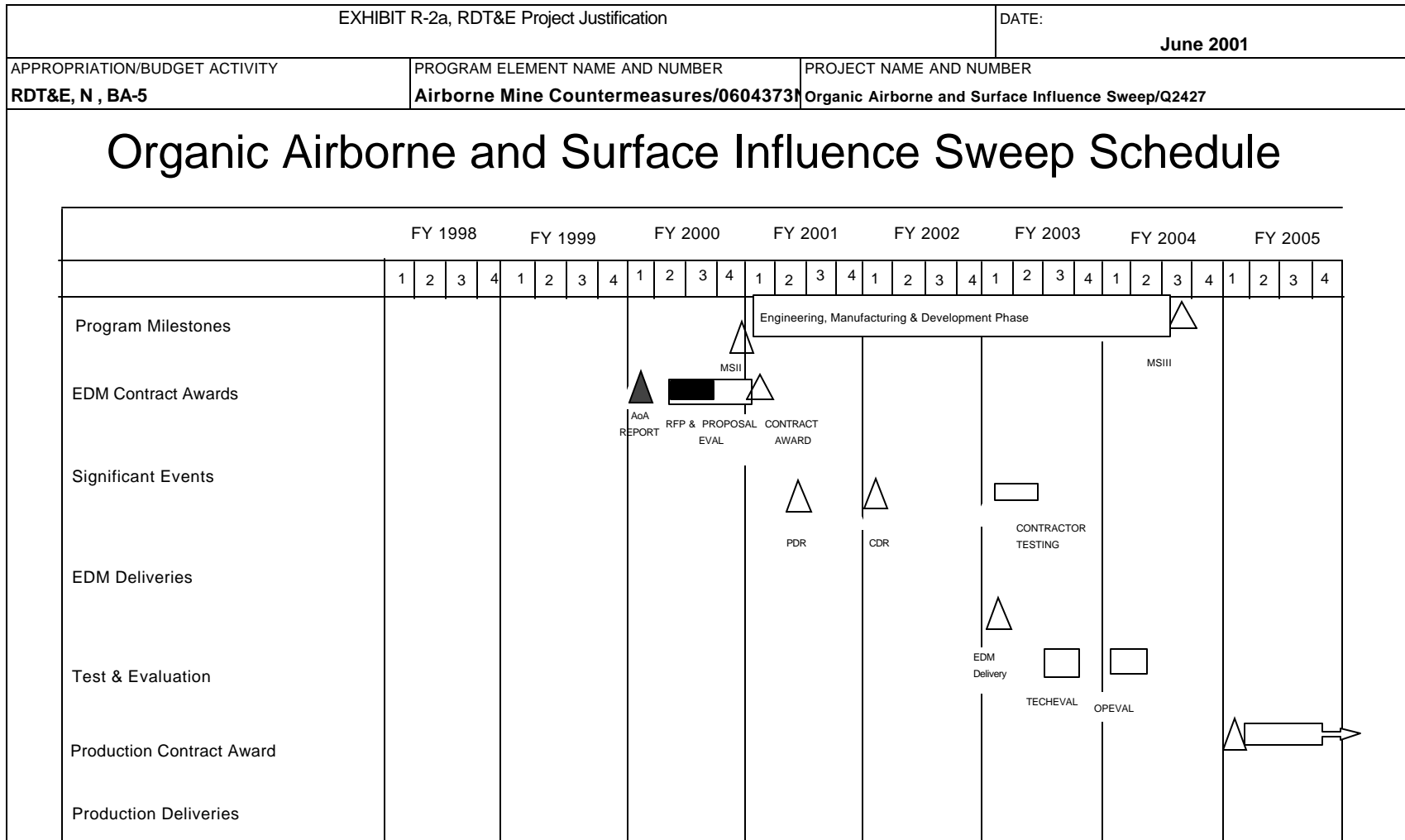
R-1 SHOPPING LIST - Item No. 115 - 14 of 115 - 25

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 14 of 25)

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R-1 SHOPPING LIST - Item No. 115 - 15 of 115 - 25

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 15 of 25)

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Organic Airborne and Surface Influence Sweep/Q2427						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development	C/CPFF	EDO Corp	1.722			0.000		0.000			1.722	
Hardware/Software Development	C/CPIF	TBD				1.500	07/01	6.962	10/01	Cont.	Cont.	
Hardware/Software Development	SS/CPFF	Aeptec Microsystems Inc				2.972	12/00					
		Rockville, MD										
Subtotal Hardware/Software Development			1.722	0.000		4.472		6.962		Cont.	Cont.	
Remarks:												
Engineering Services												
Engineering Services	WR	CSS Panama City FL		1.475	10/99	1.417	10/00	1.704	10/01	Cont.	Cont.	
Engineering Services	WR	NSWC Carderock MD	0.300			0.000		0.000			0.300	
Engineering Services	VAR	VARIOUS	0.300	0.809	10/99						1.109	
Subtotal Engineering Services			0.600	2.284		1.417		1.704		Cont.	Cont.	
Remarks:												

R-1 SHOPPING LIST - Item No. 115 - 16 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 16 of 25)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Organic Airborne and Surface Influence Sweep/Q2427						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Management Support												
Management Support	WR	CSS Panama City, FL	2.762	0.000		0.000		0.000		Cont.	Cont.	
Management Support	VAR	Various	0.030	0.530	10/99	0.780	02/01	2.524	10/01	Cont.	Cont.	
Management Support		Travel	0.032	0.036		0.040		0.040		Cont.	Cont.	
Subtotal Management Support			2.824	0.566		0.820		2.564		Cont.	Cont.	
Remarks:												
Test & Evaluation and ILS Functions												
T&E Functions	WR	CSS Panama City, FL	0.374	0.600	10/99	0.100	12/00	0.100	10/01	Cont.	Cont.	
T&E Functions	VAR	Various	0.200			0.000		0.000		0.000	0.200	
ILS Functions	WR	CSS Panama City, FL		0.300	10/99	0.303	10/00	0.305	10/01	Cont.	Cont.	
Subtotal T&E and ILS Fuctions			0.574	0.900		0.403		0.405		Cont.	Cont.	
Remarks:												
Total Cost			5.720	3.750		7.112		11.635		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 115 - 17 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 17 of 25)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5	PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N				PROJECT NAME AND NUMBER Airborne Mine Neutralization Systems/Q2473					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	12.955	7.948	17.586							Cont.
RDT&E Articles Qty			2 -AMNS							
<p>A. Mission Description and Budget Item Justification</p> <p>There is currently no rapid airborne mine neutralization capability to support minehunting. The Airborne Mine Neutralization System (AMNS) research and development effort was restarted in FY97 in Project Q0529 P.E. 0604373N. AMNS will provide the MH-60S with the capability to neutralize bottom and moored mines using an airborne delivered, expendable mine neutralization device. The AMNS will first be tested on the MH-53E to prove out the neutralization effectiveness, then it will transition to the MH-60S for organic neutralization. The Rapid Airborne Mine Clearance System (RAMICS) program began in FY00 and will provide an effective rapid organic airborne laser detection, targeting, and super cavitating projectile destruction of shallow water mines off the MH-60S platform. The RAMICS will use a laser for fire control to direct placement of super cavitating rounds that cause the mine's explosive charge to ignite and burn.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. (U) FY 2000 Accomplishments</p> <ul style="list-style-type: none"> - (U) (\$5.241) AMNS - Delivered prototype neutralizers and consoles and integrated aboard MH-53E. - (U) (\$1.200) AMNS - Initiate TECHEVAL testing for MH-53 interim capability. - (U) (\$4.584) RAMICS – Completed Advance Technology Demonstration (ATD) and Analysis of Alternatives (AOA) and initiated ORD, TEMP, Weapon Definition/Selection, and conduct munitions lethality testing. - (U) (\$1.930) AMNS - CH-60S Upgrade (Cong Add) <p>2. (U) FY 2001 Plan</p> <ul style="list-style-type: none"> - (U) (\$3.160) AMNS - Initiate integration aboard MH-60S and fabricate additional systems to test and evaluate. - (U) (\$4.679) RAMICS – Continue Weapons System Definition/Selection, munitions testing and complete ORD. - (U) (\$.109) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 										

R-1 SHOPPING LIST - Item No. 115 - 18 of 115 - 25

Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 18 of 25)

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CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification				DATE: June 2001																															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5		PROGRAM ELEMENT NAME AND NUMBER Airborne Mine Countermeasures/0604373N		PROJECT NAME AND NUMBER Airborne Mine Neutralization Systems/Q2473																															
<p>3. (U) FY 2002 Plan</p> <ul style="list-style-type: none"> - (U) (\$11.161) AMNS - Complete design, develop software, and integrate aboard MH-60S for test and evaluation. - (U) (\$ 1.800) AMNS - Conduct OPEVAL - (U) (\$4.625) RAMICS – Obtain MS I/II, award EDM contract and initiate Design Phase including ILS and TDA engineering efforts. 																																			
<p>B. Other Program Funding Summary</p> <table> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>To Complete</th> <th>Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 424800</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>AMNS</td> <td>0</td> <td>0.000</td> <td>11.357</td> <td>CONT.</td> <td>CONT.</td> </tr> <tr> <td>APN 0242000</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>RAMICS</td> <td>0</td> <td>0</td> <td>0</td> <td>CONT.</td> <td>CONT.</td> </tr> </tbody> </table>							FY 2000	FY 2001	FY 2002	To Complete	Total Cost	OPN 424800						AMNS	0	0.000	11.357	CONT.	CONT.	APN 0242000						RAMICS	0	0	0	CONT.	CONT.
	FY 2000	FY 2001	FY 2002	To Complete	Total Cost																														
OPN 424800																																			
AMNS	0	0.000	11.357	CONT.	CONT.																														
APN 0242000																																			
RAMICS	0	0	0	CONT.	CONT.																														
<p>C. Acquisition Strategy: Full and open competition contract was awarded for AMNS MH-53E EMD program. Procurement for eight MH-53E systems FY02 - FY03 will be sole source to Lockheed Martin for MH-53E capability. Full and open competition is planned for the AMNS MH-60S EMD program. LRIP award planned for FY03 following Program Review for one MH-60S sytem. Full and open competition is planned for the AMNS MH-60S procurement in FY04 after Milestone III approval.</p> <p>Following a Milestone I/II review in FY02, a full and open competition is planned for the RAMICS MH-60S EMD program. Full and open competition is planned for the RAMICS procurement in FY07.</p>																																			
<p>D. Schedule Profile: See attached.</p>																																			

R-1 SHOPPING LIST - Item No. 115 - 19 of 115 - 25

Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 19 of 25)

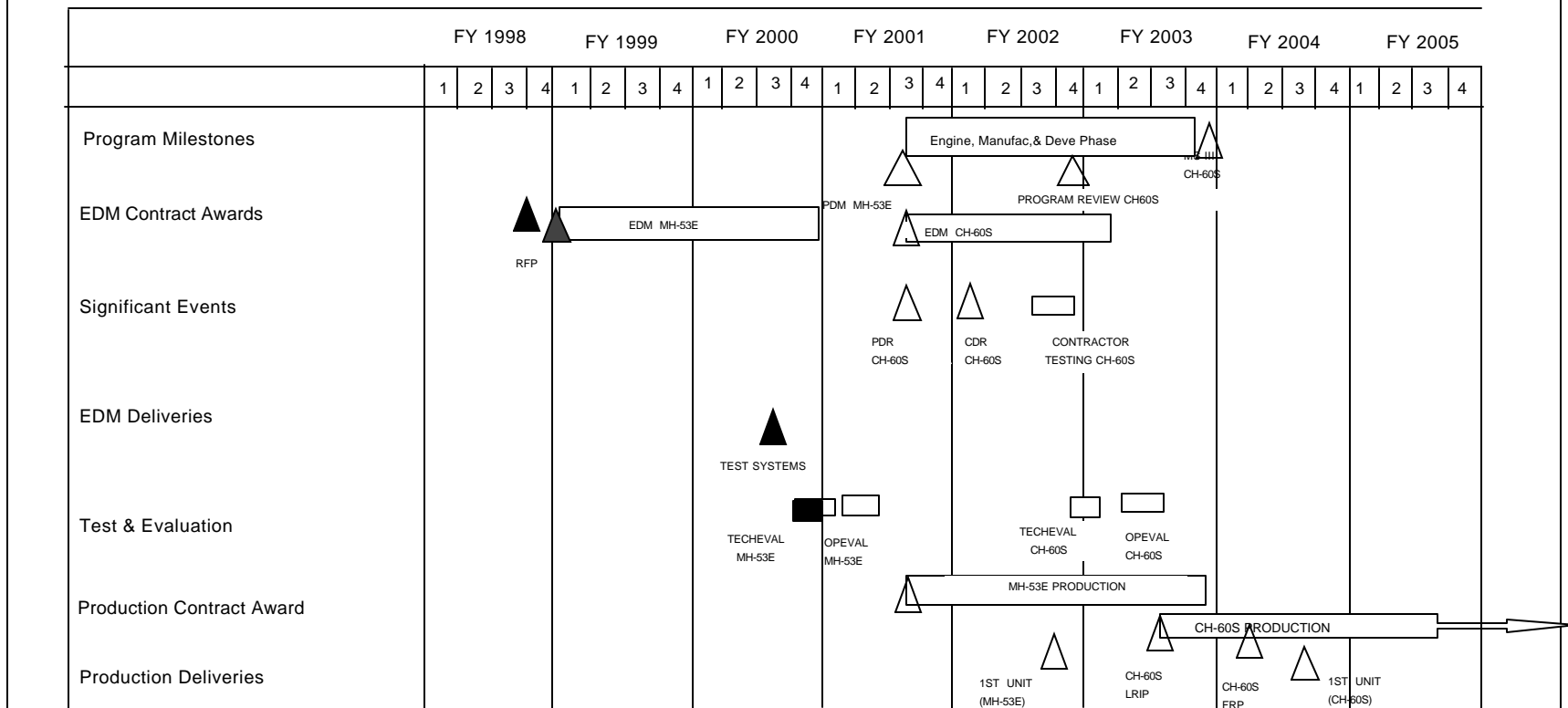
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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER		PROJECT NAME AND NUMBER		
RDT&E, N , BA-5	Airborne Mine Countermeasures/0604373N		Airborne Mine Neutralization Systems/Q2473		

Airborne Mine Neutralization System Schedule



R-1 SHOPPING LIST - Item No. 115 - 20 of 115 - 25

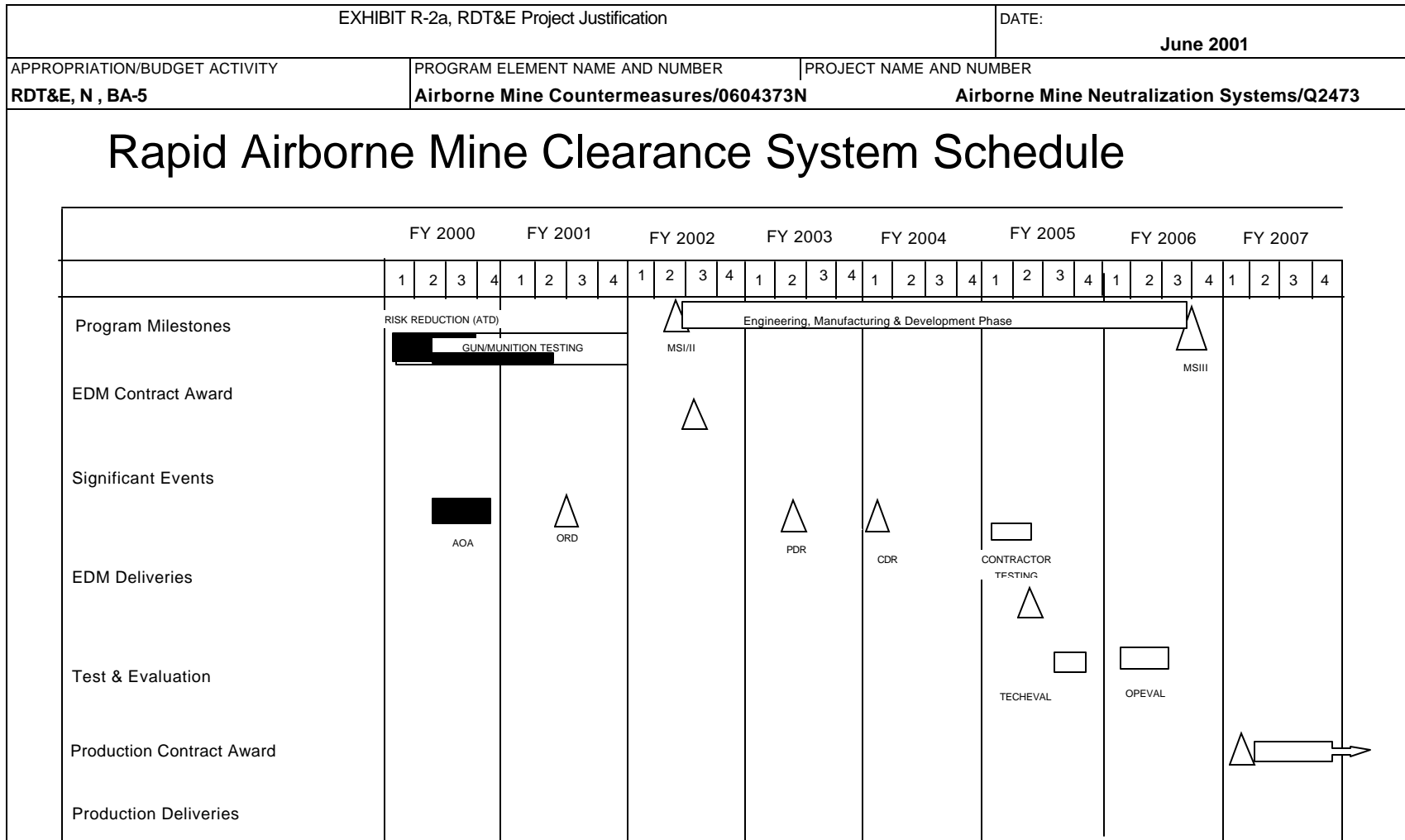
Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 20 of 25)

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R-1 SHOPPING LIST - Item No. 115 - 21 of 115 - 25

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 21 of 25)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development												
Hardware/Software Development	C/FP	LOCKHEED	1.600	1.600	12/99						3.200	
Hardware/Software Development	VAR	VARIOUS		0.338	10/99	0.000		0.000			0.338	
Hardware/Software Development	C/CPIF	TBD				1.650	05/01	6.095	12/01	Continuing	Continuing	
Subtotal Hardware/Software Development			1.600	1.938		1.650		6.095		Continuing	Continuing	
Remarks: This is for AMNS only												
Engineering Services												
Engineering Services	WR	CSS Panama City, FL		2.418	10/99	1.278	10/00	1.684	10/01	Continuing	Continuing	
Engineering Services	WR	VARIOUS	0.335	0.000				0.000		Continuing	Continuing	
Subtotal Engineering Services			0.335	2.418		1.278		1.684		Continuing	Continuing	
Remarks: This is for AMNS only												

R-1 SHOPPING LIST - Item No. 115 - 22 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 22 of 25)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Management Support												
Management Support	VAR	Various		0.016	10/99	0.236	10/00	1.095	10/01	Continuing	Continuing	
Management Support		Travel		0.024		0.040		0.040		Continuing	Continuing	
										Continuing	Continuing	
Subtotal Management Functions			0.000	0.040		0.276		1.135		Continuing	Continuing	
Remarks: This is for AMNS only												
Test & Evaluation and ILS Functions												
Test & Evaluation Functions	WR	CSS Panama City, FL		3.363	10/99	0.000		2.477	10/01	Continuing	Continuing	
Test & Evaluation Functions	C/CPIF	TBD								Continuing	Continuing	
Test & Evaluation Functions	VAR	Various		0.300	10/99	0.000		0.300	10/01	Continuing	Continuing	
										Continuing	Continuing	
ILS Functions	WR	CSS Panama City, FL		0.312	10/99	0.000		1.270	10/01	Continuing	Continuing	
Subtotal T&E and ILS Functions			0.000	3.975		0.000		4.047		Continuing	Continuing	
Total Cost			1.935	8.371		3.204		12.961		Continuing	Continuing	
Remarks: This is for AMNS only												

R-1 SHOPPING LIST - Item No. 115 - 23 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 23 of 25)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N , BA-5			Airborne Mine Countermeasures/0604373N			Airborne Mine Neutralization Systems/Q2473						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware/Software Development												
Hardware/Software Development	C/CPIF	TBD								Continuing	Continuing	
Hardware/Software Development	WR	CSS Panama City, FL		0.725	10/99					Continuing	Continuing	
Subtotal Hardware/Software Development			0.000	0.725		0.000		0.000		Continuing	Continuing	
Remarks: This is for RAMICS only												
Engineering Services												
Engineering Services	WR	CSS Panama City, FL		2.644	10/99	1.225	10/00	1.032	10/01	Continuing	Continuing	
Engineering Services	WR	VARIOUS		0.000		1.233	11/00	0.000		Continuing	Continuing	
Engineering Services	C/CPIF	TBD						3.000	04/02	Continuing	Continuing	
										Continuing	Continuing	
										Continuing	Continuing	
										Continuing	Continuing	
Subtotal Engineering Services			0.000	2.644		2.458		4.032		Continuing	Continuing	
Remarks: This is for RAMICS only												

R-1 SHOPPING LIST - Item No. 115 - 24 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 24 of 25)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N , BA-5			PROGRAM ELEMENT Airborne Mine Countermeasures/0604373N			PROJECT NAME AND NUMBER Airborne Mine Neutralization Systems/Q2473						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Management Support												
Management Support	VAR	Various		0.331	10/99	0.300	10/00	0.259	10/01	Continuing	Continuing	
Management Support		Travel		0.024		0.040		0.034		Continuing	Continuing	
										Continuing	Continuing	
Subtotal Management Functions			0.000	0.355		0.340		0.293		Continuing	Continuing	
Remarks: This is for RAMICS only												
Test & Evaluation and ILS Functions												
Test & Evaluation Functions	WR	CSS Panama City, FL		0.610	10/99	1.556	12/00	0.000		Continuing	Continuing	
Test & Evaluation Functions	C/CPIF	TBD								Continuing	Continuing	
Test & Evaluation Functions	VAR	Various								Continuing	Continuing	
										Continuing	Continuing	
ILS Functions	WR	CSS Panama City, FL		0.250	10/99	0.390	10/00	0.300	10/01	Continuing	Continuing	
Subtotal T&E and ILS Functions			0.000	0.860		1.946		0.300		Continuing	Continuing	
Total Cost			0.000	4.584		4.744		4.625		0.000	0.000	
Remarks: This is for RAMICS only												

R-1 SHOPPING LIST - Item No. 115 - 25 of 115 - 25

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 25 of 25)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
APPROPRIATION/BUDGET ACTIVITY							June 2001			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5							R-1 ITEM NOMENCLATURE			
							Submarine System Equipment Development/0604503N			
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Total PE Cost	70.764	72.132	43.706							
Submarine Support Equipment/F0775	0.907	0.933	0.656							
Submarine Sonar Improvement/F0219	62.463	60.652	35.966							
Submarine Integrated Antenna Systems/X0742	1.893	5.896	2.885							
Submarine Tactical Communications Systems/X1411	5.501	4.651	4.199							
Quantity of RDT&E Articles	2.5	0	0							
<p>A. (U) Mission Description and Budget Item Justification: The Submarine Support Equipment Program develops and improves submarine Electronic Warfare Support (ES) techniques and components, equipment, and systems that will increase submarine operational effectiveness in the increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for submarine ES to be effective in conducting the following mission areas: Joint Littoral Warfare, Joint Surveillance, Space and Electronic Warfare and Intelligence Collection, Maritime Protection, and Joint Strike.</p> <p>(U) The Submarine Sonar Improvement Program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21 and TRIDENT Class Submarines to maintain clear acoustic, tactical and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization and contact following. Current developments are focused on supporting Littoral Warfare, Regional Sea Denial, Battle Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement.</p> <p>(U) The Submarine Integrated Antenna Systems project develops the antennas needed to communicate in networks such as Ultra High Frequency Satellite Communications, Extremely Low Frequency (ELF), Extremely High Frequency (EHF), Super High Frequency and Global Positioning System. Hardware developments include: (a) mast-mounted systems; (b) buoyant cable systems; (c) expendable buoy systems and (d) submarine antenna distribution systems.</p>										

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 27)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001																									
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		R-1 ITEM NOMENCLATURE Submarine System Equipment Development/0604503N																									
<p>(U) The Submarine Tactical Communications Systems project provides attack submarines with an exterior communications system which: (a) minimizes the time required at communications depth; (b) enhances operability, reducing errors and manpower requirements; and (c) provides flexibility for low impact growth and change throughout the life of the submarine. Design efforts will provide increased antenna signal distribution and interconnection subsystems to accommodate ELF, EHF, and Mini-Demand Assigned Multiple Access and a message storage and processing subsystem.</p>																											
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 15%; text-align: center;">FY 2000</th> <th style="width: 15%; text-align: center;">FY 2001</th> <th style="width: 20%; text-align: center;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget:</td> <td style="text-align: center;">48.896</td> <td style="text-align: center;">34.801</td> <td></td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: center;">48.896</td> <td style="text-align: center;">34.801</td> <td style="text-align: center;">36.293</td> </tr> <tr> <td>Adjustment to FY 2000/2001 Appropriated Value/</td> <td style="text-align: center;">21.868</td> <td style="text-align: center;">37.331</td> <td style="text-align: center;">7.413</td> </tr> <tr> <td>FY 2001 President's Budget:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2002 President's Budget Submit:</td> <td style="text-align: center;">70.764</td> <td style="text-align: center;">72.132</td> <td style="text-align: center;">43.706</td> </tr> </tbody> </table>					FY 2000	FY 2001	FY 2002	FY 2001 President's Budget:	48.896	34.801		Appropriated Value:	48.896	34.801	36.293	Adjustment to FY 2000/2001 Appropriated Value/	21.868	37.331	7.413	FY 2001 President's Budget:				FY 2002 President's Budget Submit:	70.764	72.132	43.706
	FY 2000	FY 2001	FY 2002																								
FY 2001 President's Budget:	48.896	34.801																									
Appropriated Value:	48.896	34.801	36.293																								
Adjustment to FY 2000/2001 Appropriated Value/	21.868	37.331	7.413																								
FY 2001 President's Budget:																											
FY 2002 President's Budget Submit:	70.764	72.132	43.706																								
<p>(U) Change Summary Explanation:</p> <p style="margin-left: 20px;">Funding: See individual project summaries for specific data.</p> <p style="margin-left: 20px;">Schedule: See individual project summaries</p> <p style="margin-left: 20px;">Technical: See individual project summaries</p>																											

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 27)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5	Submarine Spt Equipment Dev/0604503N				Submarine Support Equipment Program/F0775					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Project Cost	0.907	0.933	0.656							
RDT&E Articles Qty	0	0	0							

A. (U) Mission Description and Budget Item Justification: This program develops and improves techniques and components, equipment, and systems that will increase submarine operational effectiveness in the increasingly dense and sophisticated electromagnetic environment caused by the proliferation of complex radar, communications, and navigation equipment of potential adversaries. Improvements are necessary for Submarine Electronic Support Measures to be effective in conducting the following mission areas: Joint Littoral Warfare; Joint Surveillance, Space and Electronic Warfare and Intelligence Collection; Maritime Protection; and Joint Strike. Specific efforts include: (1) AN/BLQ-10 ES System software problem evaluation and resolution, (2) de-installation of the AN/BLQ-10 ES System EDM from the Developmental Test (DT)/Operational Test (OT) test platform and and restoration to pre-test ES configuration. and (3) Engineering and Manufacturing Development of advanced technology transitioned from the Advanced Submarine Support Equipment Program (ASSEP), project F0770. The AN/BLQ-10 ES System problem evaluation will provide correction of system problems identified during Land Based Integration Testing (LBIT), DT/Operational Evaluation (OPEVAL) and Follow-on Test and Evaluation (FOT&E).

(U) Program Accomplishment and Plans:

1. (U) FY 2000 Accomplishments:

- (U) (\$.693) Performed AN/BLQ-10 EDM system updates as identified during Operational Assessment and OPEVAL.
- (U) (\$.214) Performed at-sea technical and operational evaluations of AN/BLQ-10 ES System EDM on USS Annapolis.

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 3 of 27)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Submarine Spt Equipment Dev/0604503N	PROJECT NAME AND NUMBER Submarine Support Equipment Program/F0775																								
<p>2. (U) FY 2001 Plan:</p> <ul style="list-style-type: none"> - (U) (\$.245) Perform AN/BLQ-10(V) ES System problem evaluation and resolution as a result of fleet operator feedback. - (U) (\$.671) De-Install AN/BLQ-10 ES System EDM from USS Annapolis test platform and restore to pre-test ES configuration (AN/WLR-8, AN/BRD-7 etc.). - (U) (\$.017) Portion of extramural program reserved for Small Business Innovative Research Assessment in accordance with 15 USC 638. <p>3. (U) FY 2002 Plan:</p> <ul style="list-style-type: none"> - (U) (\$.656) Software and hardware improvements associated with OPEVAL and ASSEP project F0770 transition. <p>(U) Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget:</td> <td style="text-align: right;">1.007</td> <td style="text-align: right;">0.942</td> <td style="text-align: right;">0.654</td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: right;">1.007</td> <td></td> <td></td> </tr> <tr> <td>Adjustment to FY 2000/2001 Appropriated Value/</td> <td style="text-align: right;">-0.100</td> <td style="text-align: right;">-0.009</td> <td style="text-align: right;">0.002</td> </tr> <tr> <td>FY 2001 President's Budget:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2002 President's Budget Submit:</td> <td style="text-align: right;">0.907</td> <td style="text-align: right;">0.933</td> <td style="text-align: right;">0.656</td> </tr> </tbody> </table>				FY 2000	FY 2001	FY 2002	FY 2001 President's Budget:	1.007	0.942	0.654	Appropriated Value:	1.007			Adjustment to FY 2000/2001 Appropriated Value/	-0.100	-0.009	0.002	FY 2001 President's Budget:				FY 2002 President's Budget Submit:	0.907	0.933	0.656
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FY 2001 President's Budget:																										
FY 2002 President's Budget Submit:	0.907	0.933	0.656																							

R-1 SHOPPING LIST - Item No. 116

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 27)

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EXHIBIT R-2a, RDT&E Project Justification				DATE:	
		June 2001			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER		PROJECT NAME AND NUMBER	
RDT&E, N/BA-5		Submarine Spt Equipment Dev/0604503N		Submarine Support Equipment Program/F0775	
(U) Change Summary Explanation:					
Funding: FY00 decrease of \$0.076 was for various minor program adjustments, and decrease of \$0.024 for Small Business Initiative. FY01 decrease of \$0.009 is for 0.7% pro-rata reduction. FY 02 increase of \$0.002 is for minor pricing adjustments and government wide rescission.					
Schedule: Not Applicable					
Technical: Not Applicable					
B. (U) Other Program Funding Summary:					
		FY 2000	FY 2001	FY 2002	
OPN Line 256000	BLQ-10 688I/21 Backfit	15.837	5.400	10.548	
PE0204281N					
SSEP ML015					
ML017	BLQ-10 Fld Chg Kits	0.000	0.000	1.040	
ML018	IEM Fld Change Kits	0.000	0.000	0.000	
OPN Line 256005		SSN 688I/21BLQ-10 Installation	0.023	0.953	1.557
PE 0204281N					
SSEP ML5IN					
O&M,N		0.677	1.830	2.030	
PE 0702827N/Subhead 8B2B					
SSEP					
SCN LI 201300		0.000	20.667	21.827	
PE 0204287N					
Partial (AN/BLQ-10 ES Only)					

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Exhibit R-2a, RDT&E Project Justification
 (Exhibit R-2a, page 5 of 27)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Submarine Spt Equipment Dev/0604503N	PROJECT NAME AND NUMBER Submarine Support Equipment Program/F0775
<p>Related RDT&E: (U) PE 0603562N/Submarine Tactical Warfare System (U) PE 064558N/New SSN Combat Systems Development/Project F1950 (U) PE 064558N/New SSN Combat Systems Development/Project F2430</p> <p>C. (U) Acquisition Strategy: LRIP approved November 99 and Full rate production approval planned October 2000. Current efforts in this project consist of Product Improvements (Tech Insertion) to the AN/BLQ-10(V) ES system.</p> <p>D. (U) Schedule Profile: ESM Program Schedule attached.</p>		

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 6 of 27)

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Exhibit R-3 Cost Analysis (page 1)							DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDTE&E, N/BA-5			Submarine Sys Equip Dev/0604503N			Submarine Support Equipment Program/F0775						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Primary Hardware Development												
IEM/HPI Interface	SS/CPIF	SENSYS Tech Newington, V	2.700									
AN/BLQ-10 ES/IEM BDE EDMS	C/FFP	Lockheed Syracuse, NY	7.778									
AN/BLQ-10 ES Product Improvement	SS/FFP	Lockheed Syracuse, NY	0.398	0.693	03/00	0.172	12/00	0.656	12/00			
Ancillary Hardware Development												
Systems Engineering	WR	NUWC Newport, RI	4.392	0.142	10/00	0.671						
Miscellaneous	VARIOUS	VARIOUS	12.759	0.023	Var	0.059	Var	0.000	N/A			
Licenses												
Tooling												
GFE (AN/UYQ-70 Displays)	C/FFP	Lockheed Eagan.MN	0.700									
IEM ADSU EMD (EDMs)	C/CPIF/CPAF	E-Systems Goleta, CA	38.386									
Award Fees	C/CPAF	E-Systems Goleta, CA	0.200									
Subtotal Product Development			67.313	0.858		0.902		0.656				
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Engineering Technical Services	C/CPIF	GRCI McLean, VA	2.700									
Studies Analysis & Evaluations	MIPR	MITRE McLean, VA	1.000									
GFE												
Subtotal Support			3.700	0.000		0.000		0.000				
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 27)

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Submarine Sys Equip Dev/0604503N			Submarine Support Equipment Program/F0775						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Developmental Test & Evaluation												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000		0.000				
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Management Support Services	C/CPAF	EG&G, Arlington, VA	0.292	0.000	N/A	0.000	N/A	0.000	N/A			
Travel	TO's	Various		0.049	10/00	0.031	10/00	0.000	N/A			
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.292	0.049		0.031		0.000				
Remarks:												
Total Cost			71.305	0.907		0.933		0.656				
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 27)

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EXHIBIT R-2a, RDT&E Project Justification					DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER				
RDT&E, N/BA-5	Submarine Sys Equip Dev/0604503N				Submarine Sonar Improvement/F0219				
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002						
Project Cost	62.463	60.652	35.966						
RDT&E Articles Qty	2.5	0	0						

A. (U) Mission Description and Budget Item Justification: This program delivers block updates to Sonar Systems installed on SSN 688, 688I, 21 and TRIDENT Class Submarines to maintain clear acoustical, tactical and operational superiority over submarine and surface combatants in all scenarios through detection, classification, localization and contact following. Current developments, detailed below, are focused on supporting Littoral Warfare, Regional Sea Denial, Battle Group Support, Diesel Submarine Detection, Surveillance, and Peacetime Engagement. A-RCI is a multi-phased, evolutionary development effort geared toward addressing Acoustic Superiority issues through the rapid introduction of interim development products applicable to SSN 688, 688I Flight, SSN21, and SSBN 726 Class Submarines. A-RCI Phases I and II introduce towed array processing improvements; A-RCI Phase III introduces spherical array processing improvements. The AN/BSY-1 High Frequency Upgrade is a stand-alone program which will be introduced as A-RCI Phase IV for SSN 688I and Seawolf Class only and carries on to FY03. As part of CNO N872's plan to maintain acoustic superiority for In-Service Submarines a joint cooperative effort with NAVSEA (SEA 93, ASTO) to deliver annual Advanced Processing Builds (APBs). The capabilities in the APBs will be integrated as part of A-RCI certified systems. This effort, known as the N872 Business Plan funds the APB integration efforts with the Multi-Purpose Processor as well as the AN/BQQ-10 Sonar system beginning in FY02. This budget submit also reflects development of the Total Ship Monitoring System as well as Acoustic Intelligence (ACINT 21) capabilities to be introduced into the Fleet. Precision Bottom Mapping transition, integration and testing begin in FY01. Towed systems development efforts will focus on: (a) tow cable improvements for shallow water towing in littoral environments; (b) hydrophone and telemetry cost and risk reduction initiatives; (c) mechanical endurance improvements; (d) TB-29 (A) towed array Engineering Developmental Model (EDM) development; and (e) TB-16 replacement EDM development. The TB-29(A) array will provide additional war fighting capability over the TB-23 at a reduced unit cost compared to the TB-29, through the use of Commercial Off The Shelf (COTS) telemetry, lower cost hydrophones, and fewer non-acoustic sensors. AN/BSY-2 efforts are focused on ARCI-(V)5 development which implements ARCI Phases II-IV in the Seawolf Class submarines. AN/BSY-2 development also delivers a CCS MK2 Variant to the Seawolf Class.

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA-5	Submarine Sys Equip Dev/0604503N	Submarine Sonar Improvement/F0219
<p>1. (U) FY 2000 Accomplishments:</p> <ul style="list-style-type: none"> - (U) (\$ 9,159) Continued development of A-RCI phase III. Conducted at-sea testing of A-RCI Phase I – IV. - (U) (\$ 8.957) Continued development of A-RCI Phase IV. Continued Advanced Processing Build Sea Testing. - (U) (\$23.863) Continued research, development, training, and deployment of the Multipurpose Processor - (U) (\$ 9.050) Continued development of TB-29(A) towed array. - (U) (\$.900) Continued development for DTC Improvements. - (U) (\$ 8.434) Began ARCI-(V)5 development integration. - (U) (\$ 2.100) Began Precision Bottom Mapping transition, integration and testing. <p>2. (U) FY 2001 Plan:</p> <ul style="list-style-type: none"> - (U) (\$11.945) Continue Advance Processing Build Sea Testing, Integration and Certification. - (U) (\$5.433) Complete development, Opeval and Techeval for A-RCI Phase III and IV. - (U) (\$25,000) Continued research, development, training, and deployment of the Multipurpose Processor - (U) (\$3.555) Continue development of TB-29 (A) towed array. - (U) (\$1.918) Begin development of TB-16 replacement. - (U) (\$.900) Continue development for DTC Improvements. - (U) (\$6.914) Continue ARCI-(V)5 development and integration. - (U) (\$3.500) Continue Precision Bottom Mapping transition, integration and testing. - (U) (\$1.487) Small Business Innovation Research Assessment <p>3. (U) FY 2002 Plan:</p> <ul style="list-style-type: none"> - (U) (\$22.388) Continue Advance Processing Build Sea Testing, Integration and Certification. - (U) (\$ 1.465) Complete development, Techeval and Opeval of TB-29 A towed array, and obtain Milestone III. - (U) (\$ 3.920) Continue development of TB-16 replacement. - (U) (\$.900) Continue development for DTC Improvements. - (U) (\$4.793) Continue ARCI-(V)5 development, integration and test. - (U) (\$2.500) Continue Precision Bottom Mapping transition, integration and testing. 		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Submarine Sys Equip Dev/0604503N	PROJECT NAME AND NUMBER Submarine Sonar Improvement/F0219	
(U) Program Change Summary:			
	FY 2000	FY 2001	FY 2002
FY 2001 President's Budget:	40.023		24.540
Appropriated Value:	40.023	28.214	
Adjustment to FY 2000/2001 Appropriated Value/	22.440	32.438	11.426
FY 2001 President's Budget:			
FY 2002 PRESBUDG Budget Submit:	62.463	60.652	35.966
(U) Change Summary Explanation:			
<p>Funding: FY 2000 increase of \$22,440 is attributed to increases of \$0.061M for Restoring Issue 62288 Outsourcing and \$28.0M for 631 - MFP & BQG-5 Plus-up and decreases of -\$2.3M for Reduction of NMRS OM&N funding, -\$0.363M for Across the Board Reduction, -\$1,455M for FY00 (Small Business Initiative and the decrease of \$1.503 was for various minor program adjustments and undistributed reductions. FY 2001 increase of \$32,438M is attributed to increases of \$33.0M Congressional Plus-up for development of the Multi-Purpose Processor and ARCI and a decrease of \$562 for other minor adjustments. FY2002 increase of \$11.426M is attributed to an increase of \$11,300 for BSO Realignment Residual issue and an increase of \$0.126M for minor pricing adjustments.</p> <p>Schedule: The completion of Block 3B2 has been rescheduled from the last quarter of FY00 to the first quarter of FY01. The completion of TECHEVAL/OPEVAL has been rescheduled from the last quarter of FY00 to the third quarter of FY01. The TB-29A Array Technical and Opeval have been delayed to FY02 due to a development start caused by contract protest and stop work order. The ARCI TECHEVAL/OPEVAL schedule has been modified. This test events have been extended to the end of FY01.</p> <p>Technical: A-RCI increases technical capabilities over programs through the use of commercial off-the-shelf components, open system architecture, and leveraging advanced development efforts. Due to a program replan B2-CI Phase 2 has been replaced by ARCI-(V)5. ARCI-(V)5 brings ARCI Phases II-IV to the SEAWOLF Class Submarines. ARCI-(V)5 adds improved Towed Array (Concurrent spatial vernier threatband processing), Large Spherical Array and High Frequency Array improvements as well as replacing the aging and obsolete Enhanced Modular Signal Processors with COTs based Multi Purpose Processors. scheduling of Block 3B2 and the subsequent rescheduling of TECHEVAL and OPEVAL can be attributed to additional software fixes that were required for delivery in the Block 3B2 product prior to the conduct of TECHEVAL/OPEVAL.</p>			
B.			
	FY 2000	FY 2001	FY 2002
OPN BLI 21470	211.942	111.613	88.016
RELATED RDT&E:			
PE 0604524N (Submarine Combat Systems) PE 0604558N (New SSN Combat Systems Development) PE 0604561N (SSN-21 Development) PE 0604562N (Submarine Tactical Warfare System (ENG))			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Submarine Sys Equip Dev/0604503N	PROJECT NAME AND NUMBER Submarine Sonar Improvement/F0219
<p>C. (U) Acquisition Strategy: The TB-29(A) will be developed and manufactured under the US Navy Towed Systems Omnibus contract, awarded in FY99 to Lockheed Martin Integrated Systems, Bethesda, MD using full and open competition. This flexible contract vehicle will be used by submarine, surface ship, and surveillance towed system program offices. The contract is planned to take advantage of economies of scale in development and manufacturing and to encourage the use of commonality among all Navy towed systems. A Low-Rate Initial Production (LRIP) approval was granted for TB-29 (A) and contract was awarded in FY00. A second Low-Rate Initial Production (LRIP) approval was granted for TB-29 (A) and contract was awarded in the second quarter FY01. An Operational Evaluation (OPEVAL) on a SSN688 or SSN688I platform is planned in FY02 to support a Milestone III Release to Fleet (RTF) decision for TB-29(A).</p> <p>A-RCI utilizes an open architecture and Commercial Off-the-Shelf products in support of new and upgraded sonar systems. A sole source cost plus award fee contract was awarded to Lockheed Martin Federal Systems and Digital System Resources. Program Review with Milestone Decision Authority was conducted in December 1999 granting approval for the FY00 production option.</p> <p>A Sole Source Cost Plus Award Fee with multiple option years ending in FY 2001 was awarded to Lockheed Martin, Syracuse in 1996. A contract extension is contemplated followed by a new sole source contract with Lockheed Martin Corporation.</p> <p>D. (U) Schedule Profile: See attached schedules.</p>		

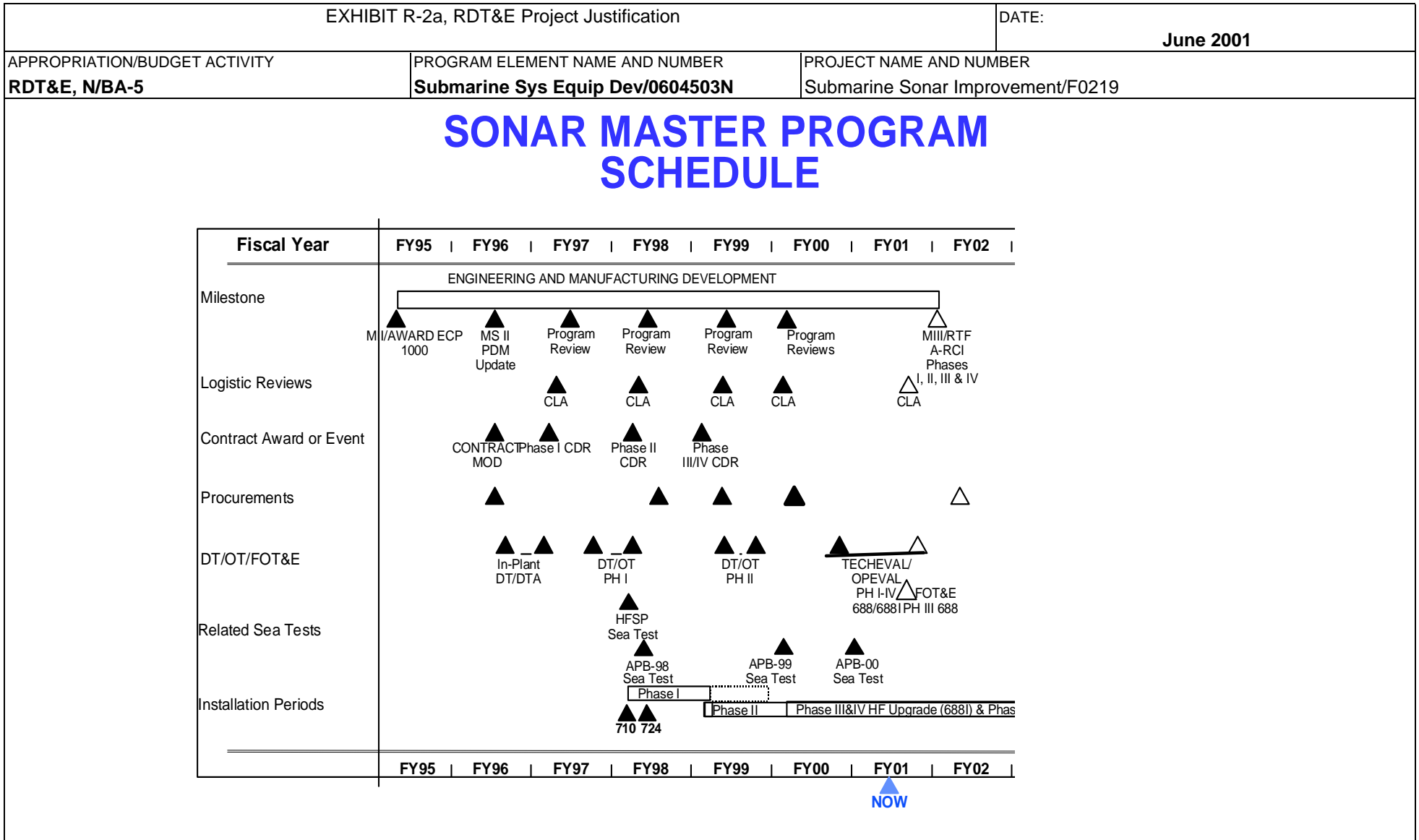
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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)										DATE:					
APPROPRIATION/BUDGET ACTIVITY										PROGRAM ELEMENT			PROJECT NAME AND NUMBER		
RDT&E, N/BA-5										SSN-688 and Trident Modernization/0604503N			Submarine Sonar Improvement/F0219		
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date						
Primary Hardware Development	C/Various	Lockheed Martin (OMNIBUS)	3.561	7.398	N/A	2.928	N/A	0.000	N/A						
Primary Hardware Development	SS/Various	Chesapeake Science	4.428	0.463	N/A	0.000	N/A	4.415	N/A						
Primary Hardware Development	SS/CPAF	Lockheed Manassas, VA	65.110	13.550	N/A	8.543	N/A	8.903	N/A						
Ancillary Hardware Development															
Systems Engineering	WR	NUWC Newport, RI	59.738	6.513	11/99	7.827	10/00	2.504	10/01						
Systems Engineering	SS/CPAF	LMC, Syracuse	0.000	3.875	11/99	1.566	N/A	0.000	N/A						
Systems Engineering	Various	Various	6.000	3.627	N/A	3.993	N/A	3.302	N/A						
Miscellaneous	Various	Various	2.888	4.235	N/A	3.884	N/A	3.849	N/A						
Licenses															
Tooling															
GFE															
Award Fees	SS/CPAF	Lockheed, Syracuse NY	0.000	0.385		0.110	N/A	0.000	N/A						
Subtotal Product Development			141.725	40.046		28.851		22.973							
<p>Remarks: Maximum award fee budgeted for LMC, Syracuse contract averages 10% of the value placed on contract. Maximum award fee budgeted for Lockheed Martin Federal Systems contract averages 12% of the value placed on contract</p> <p>10/1/96 - 3/31/97 received a rating of outstanding and 100% award .</p> <p>4/1/97 - 9/30/97 received a rating of outstanding and 100% award.</p> <p>10/1/97 - 3/31/98 received a rating of above average and 80% award.</p> <p>4/1/98 - 9/30/98 received a rating of outstanding and 100% award</p> <p>10/1/98 - 3/31/99 received a rating of outstanding and 100% award</p> <p>4/1/99 - 9/30/99 received a rating of Outstanding and 100% award.</p> <p>10/1/99 - 3/31/00 received a rating of Outstanding and 100% award.</p>															
Development Support Equipment															
Primary Software Development	SS/CPAFF	Digital Systems Resources,VA	24.000	21.300	11/99	29.800	N/A	10.000	N/A						
Training Development															
Integrated Logistics Support															
Configuration Management															
Technical Data															
GFE															
Subtotal Support			24.000	21.300		29.800		10.000							
Remarks:															

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Exhibit R-3, Project Cost Analysis
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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN-688 and Trident Modernization/0604503N			Submarine Sonar Improvement/F0219						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Developmental Test & Evaluation												
Operational Test & Evaluation												
Developmental/Operational T&E	Various	Various	4.072	0.355	N/A	1.224	N/A	2.200	N/A			
Tooling												
GFE												
Subtotal T&E			4.072	0.355		1.224		2.200				
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Management Support Services	Various	Various	1.372	0.687	N/A	0.702	N/A	0.718	N/A			
Travel	PD	NAVSEA	0.360	0.075	N/A	0.075	N/A	0.075	N/A			
Labor (Research Personnel)												
Overhead												
Subtotal Management			1.732	0.762		0.777		0.793				
Remarks:												
Total Cost			171.529	62.463		60.652		35.966				
Remarks:												

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Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N			PROJECT NAME AND NUMBER Submarine Integrated Antenna System/X0742					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002						
Project Cost		1.893	5.896	2.885						
RDT&E Articles Qty		N/A	N/A	N/A						

A. (U) Mission Description and Budget Item Justification: The Submarine Integrated Antenna System (SIAS) project provides for the development of submarine antennas designed to (a) Improve the Data Rate capabilities of Submarine Antenna and their interface to the External Communications System (ECS), (b) improve submarine antenna performance and Data Rate while the submarine is operating at speed and depth, (c) provide antenna compatability with new wave forms and receiver equipment, and (d) improve antenna design to reduce Total Ownership Cost. The project funds research and development for submarine antennas including OE-538/BRC Multi-Function Antenna, Submarine High Data Rate (HDR) Antenna, P3I to the HDR Antenna including military Ka and Common Tactical Data Link (TCDL) for communciations with UAVs, Advance HDR Antenna Development and OE-538 Improved UHF Gain development. For improved performance at depth and speed, the project funds the development of the Multi-Element Buoy Cable Antenna (MBCA) and the On-Hull Antenna.

(U) Program Accomplishments and Plans:

1. (U) FY 2000 Accomplishments:

- (U) (\$0.422) HDR - Continued development and operational testing.
- (U) (\$0.358) OE-538 - Initiated development for design changes required for submarine platform applications i.e. Trident Class.
- (U) (\$1.113) Antenna Transition Engineering - Evaluated Transitional Antenna Technology, cataloged data, and provided testing of critical antenna parameters to meet submarine platform requirements. Continued development of UHF SATCOM 3dB antenna gain. Investigated UAV link requirements and antenna modifications required to support this effort.

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N	PROJECT NAME AND NUMBER Submarine Integrated Antenna System/X0742

2. (U) FY 2001 Plan:

- (U) (\$0.373) OE-538 - Continue development for design changes required for submarine platform application i.e. Trident.
- (U) (\$5.523) Antenna Transition Engineering - Continue development of UHF SATCOM 3dB antenna gain. Continue development of improved UHF SATCOM antenna subsystem to upgrade the OE-538 antenna. Continue to perform program definition and risk reduction for the next generation submarine antenna system. Continue technology and SATCOM assessments and system configuration option evaluation for the Advanced High Data Rate (AdvHDR) mast and Advanced Buoyant Cable (AdvBCA) antenna systems. \$5.0M is Congressional Plus-up funding to improve UHF antenna systems providing higher data rate communications with the objective to enable global connectivity across all submarine missions in accordance with network centric doctrine.

3. (U) FY 2002 Plan:

- (U) (\$0.365) OE-538 - Continue (Trident) Engineering and Development (Non-Recurring Engineering).
- (U) (\$0.800) Advanced HDR - Complete specifications to provide broadband frequency coverage communications multi-functionality and higher data rates over existing antennas at periscope depth while maintaining stealth objective.
- (U) (\$1.720) Antenna Transition Engineering - Provide continued program definition, system specifications, and risk reduction to the next generation antenna systems for planned FY03 EMD program starts, AdvHDR, and AdvBCA. Continue technology performance and maturity assessment for rapid insertion potential to upgrade current antenna systems for support of emerging SATCOM circuits to meet evolving fleet requirements.

B. (U) Program Change Summary:

	FY 2000	FY 2001	FY 2002
FY 2001 President's Budget:	2.019	0.951	843
Appropriated Value:	2.019	0.951	
Adjustment to FY 2000/2001 Appropriated Value	0.126	4.945	2.042
FY 2002 President's Budget Submit:	1.893	5.896	2.885

(U) Change Summary Explanation:

Funding: N/A

- 1) FY 2000 decrease of \$0.118M for Miscellaneous Navy Adjustments, .008M for Section 8055 Congressional Proportionate Rescissions.
- 2) FY 2001 decrease of \$0.042M for Section 8086 .7% pro-rata reduction and \$0.013M for Government wide rescission PL 106-554 Sec. 1. \$5.000M increase to comply with Congressional Plus-up for Antenna Technology Improvements.
- 3) FY2002 increase of \$2.0M for Common Submarine Radio Room and and in crease \$0.042M for program adjustments.

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N	PROJECT NAME AND NUMBER Submarine Integrated Antenna System/X0742								
<p>Schedule:</p> <p>1) OE-538/BRC: RFDAC ACU Variant will begin installations with the OE-538 multi-function mast in FY02.</p> <p>Technical: N/A</p> <p>C. (U) Other Program Funding Summary:</p> <table><tr><td></td><td>FY 2000</td><td>FY 2001</td><td>FY 2002</td></tr><tr><td></td><td>83.241</td><td>77.241</td><td>89.309</td></tr></table> <p>OPN Line 313000 Hardware and 313005 Installation (Full)</p> <p>RELATED RDT&E:</p> <p>PE 0602232N (Space and Electronic Warfare (SEW) Technology)</p> <p>PE 0303109N (Satellite Communications) – Provides for the EHF transmitter and receiver that utilizes the antenna developed under this program.</p>				FY 2000	FY 2001	FY 2002		83.241	77.241	89.309
	FY 2000	FY 2001	FY 2002							
	83.241	77.241	89.309							

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N	PROJECT NAME AND NUMBER Submarine Integrated Antenna System/X0742

D. (U) Acquisition Strategy:

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Program Milestones	2Q OE-538/BRC MSIII	3Q HDR MSIII	
Engineering Milestones			
T&E Milestones	4Q HDR DT/OTII		4Q OE-538/Trident FOT&E
Contract Milestones	3Q HDR (LRIP)* 2Q OE-538 (FRP)	3Q HDR (FRP)	

* MSII decision for 9 LRIPs in FY 1999 and 13 in FY 2000.

E. (U) Schedule Profile: See paragraph C above.

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 19 of 2)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN 688 & Trident Modernization/0604503N			Submarine Integrated Antenna System/X0742						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date					
Primary Hardware Development												
Hardware Development	CPFF	Raytheon Marlboro, MA	3.868	0.000	N/A	0.000	N/A					
Hardware Development	WX	NUWC Newport, RI	2.082	5.370	Various	0.365	Various					
Hardware Development	TBD	TBD										
Software Development	Various	Various	0.300	0.000	Various	0.000	Various					
Ancillary Hardware Development												
Systems Engineering	Various	Various	2.243	0.425	Various	2.353	Various					
Site Platform Integration	Various	Various	0.100	0.000	Various	0.000	Various					
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			8.593	5.795		2.718						
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support	Various	Various	0.255	0.000	Various	0.000	Various					
Configuration Management												
Technical Data	Various	Various										
GFE												
Subtotal Support			0.255	0.000		0.000						
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 20 of 27)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER							
RDT&E, N/BA-5			SSN 688 & Trident Modernization/0604503N			Submarine Integrated Antenna System/X0742							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date						
Developmental Test & Evaluation													
Operational Test & Evaluation													
Developmental/Operational T&E	Various	Various	1.223	0.000	Various	0.000	Various						
Tooling													
GFE													
Subtotal T&E			1.223	0.000		0.000							
Remarks:													
Contractor Engineering Support													
Government Engineering Support													
Program Management Support	Various	Various	0.674	0.101	Various	0.167	Various						
Management Support Services													
Travel													
Labor (Research Personnel)													
Overhead													
Subtotal Management			0.674	0.101		0.167							
Remarks:													
Total Cost			10.745	5.896		2.885							
Remarks:													

R-1 SHOPPING LIST - Item No. 116

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 21 of 27)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N			PROJECT NAME AND NUMBER Submarine Tactical Communication System/X1411					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002						
Project Cost		5.501	4.651	4.199						
RDT&E Articles Qty		N/A	N/A	N/A						

A. (U) Mission Description and Budget Item Justification: The Submarine Tactical Communications System project provides submarines with communications systems designed to: (a) enhance data throughput through automation and integrated network management; (b) copy tactical data networks, (c) provide submarines IP connectivity; (d) be interoperable with other U.S. and allied military networks; and (e) improve reliability, maintainability, and availability. This is accomplished by providing the submarine with a properly integrated mix of Navy standard and commercial off-the-shelf communication equipment covering a wide range of frequencies and modes. This project includes the Submarine Communications Support System (SCSS) which provides a system engineering approach for the design and evaluation of wideband and narrowband modernization plans. In addition, the project provides support for the Land-Based Submarine Radio Room (LBSRR) for evaluation and integration of new systems prior to introduction into the Fleet. The project includes system engineering efforts associated with demonstration of new technology which will allow the submarine to be a participant in battle group and joint operations. The new technology will increase the submarine's communications, command, and control capability and interoperability with the rest of the Navy. This program also provides funds to integrate Satellite Link-16 into the SCSS and the transition to a Tactical Data Link. This project also funds the follow-on program to SCSS, the Common Submarine Radio Room (CSRR). CSRR will leverage the development of VIRGINIA Class Exterior Communications System (ECS) which includes Open Systems Architecture (OSA) and install the VIRGINIA ECS on all classes of submarines. For OHIO Class submarines, the TRIDENT Integrated Radio Room (IRR) will be replaced with the CSRR instead of a SCSS variant. The SSN21 Class submarines will be the first to receive the upgrade and will be followed by the OHIO Class submarines. LOS ANGELES Class submarines will be upgraded beginning in FY06.

(U) Program Accomplishments and Plans:

1. (U) FY 2000 Accomplishments:

- (U) (\$4.232) SCSS - Completed design and began integration of SCSS Phase I. Began planning and design of the Common Submarine Radio Room.
- (U) (\$1.269) Submarine Tactical Data Link (STDL) - Continued integration and development testing for STDL.

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Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 22 of 2)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																				
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N	PROJECT NAME AND NUMBER Submarine Tactical Communication System/X1411																				
<p>2. (U) FY 2001 Plan:</p> <ul style="list-style-type: none"> - (U) (\$4.361) SCSS and CSRR (Includes Trident SCSS) – Complete integration of SCSS Phase I. Continue design of CSRR. - (U) (\$0.290) Submarine Tactical Data Link (STD L) – Continue integration and development testing for STD L . <p>3. (U) FY 2002 Plan:</p> <ul style="list-style-type: none"> - (U) (\$4.199) CSRR (Includes Trident SCSS) – Complete design of CSRR and begin integration for OHIO and SEAWOLF Class submarines. 																						
<p>B. (U) Program Change Summary:</p> <table> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget:</td> <td>5.847</td> <td>4.694</td> <td></td> </tr> <tr> <td>Appropriated Value:</td> <td>5.847</td> <td>4.694</td> <td>10.256</td> </tr> <tr> <td>Adjustment to FY 2000/2001 Appropriated Value</td> <td>-0.346</td> <td>-0.043</td> <td>-6.057</td> </tr> <tr> <td>FY 2002 President's Budget Submit:</td> <td>5.501</td> <td>4.651</td> <td>4.199</td> </tr> </tbody> </table> <p>(U) Change Summary Explanation: Funding: N/A</p> <ol style="list-style-type: none"> 1) FY 2000 decrease of \$0.0323M Miscellaneous Navy Adjustments \$0.023M for Section 8055 Congressional Proportionate Rescissions. 2) FY 2001 decrease of \$0.033M for Section 8086 .7% pro-rata reductionand \$0.010M for Government wide rescission PL 106-554 Sec. 1. 3) FY 2002 decrease of \$6,100M for Common Submarine Radio Room and an increase of \$0.043M for various program adjustments. 				FY 2000	FY 2001	FY 2002	FY 2001 President's Budget:	5.847	4.694		Appropriated Value:	5.847	4.694	10.256	Adjustment to FY 2000/2001 Appropriated Value	-0.346	-0.043	-6.057	FY 2002 President's Budget Submit:	5.501	4.651	4.199
	FY 2000	FY 2001	FY 2002																			
FY 2001 President's Budget:	5.847	4.694																				
Appropriated Value:	5.847	4.694	10.256																			
Adjustment to FY 2000/2001 Appropriated Value	-0.346	-0.043	-6.057																			
FY 2002 President's Budget Submit:	5.501	4.651	4.199																			

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001						
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER SSN 688 & Trident Modernization/0604503N	PROJECT NAME AND NUMBER Submarine Tactical Communication System/X1411						
<p>Schedule: N/A</p> <p>Technical: N/A</p> <p>C. (U) Other Program Funding Summary:</p> <table><tr><td>FY 2000</td><td>FY 2001</td><td>FY 2002</td></tr><tr><td>83.241</td><td>77.241</td><td>89.309</td></tr></table> <p>OPN Line 31300 Hardware and 313005 Installation (Full)</p> <p>RELATED RDT&E:</p> <p>PE 0204163N (Fleet Communications)</p> <p>PE 0602232N (Space & Electronic Warfare (SEW) Technology)</p>			FY 2000	FY 2001	FY 2002	83.241	77.241	89.309
FY 2000	FY 2001	FY 2002						
83.241	77.241	89.309						

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDTE&E, N/BA-5	SSN 688 & Trident Modernization/0604503N	Submarine Tactical Communication System/X1411
<p>C. (U) Acquisition Strategy: SCSS the system engineering and integration for the N87/N6 narrowband and wideband modernization plans on SSN 688 Class submarines. CSRR transforms multiple suites of class-specific, closed system equipment to the VIRGINIA Class ECS which incorporates OSA communications equipment. The SCSS and TRIDENT SCSS programs are combined to provide the funding required to implement CSRR on all classes of submarines.</p> <p>CSRR will:</p> <ul style="list-style-type: none"> Leverage off VIRGINIA Class ECS design. Use VIRGINIA Class ECS control and management software. Apply a systems approach to design and implementation of JMCOMS. Maximize use of COTS products and emerging technologies. 		
	<u>FY 2000</u>	<u>FY 2001</u>
		<u>FY2002</u>
Program Milestones		
Engineering Milestones		(STD L) 1Q LBSRR DT-I
T&E Milestones		(SCSS) 1Q TECHEVAL DT-IIA (SCSS) 2/3Q OPEVAL (LBSRR) OT-IIA (SCSS) 4Q OPEVAL (SSN OT-IIA) (STD L) 1Q NCTSI Certification (STD L) 2/3Q OPEVAL (at sea) (STD L) 4Q Operational Test
Contract Milestones		

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 25 of 2)

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Exhibit R-3 Cost Analysis (page 1)							DATE: June 2001						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER							
RDT&E, N/BA-5			SSN 688 & Trident Modernization/0604503N			Submarine Tactical Communication System/X1411							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date						
Primary Hardware Development													
Hardware Development	CPFF	SSC-SD San Diego, CA	1.900	0.500	TBD	0.000	TBD						
Hardware Development*	CPFF	SSC-SD San Diego, CA			TBD	0.500	TBD						
Software Development	CPFF	SSC-SD San Diego, CA	1.100	0.500	TBD	0.350	TBD						
Software Development	WX	NUWC Newport, RI	4.000	1.200	Various	1.040	TBD						
Ancillary Hardware Development													
Systems Engineering	Various	Misc Labs	3.848	0.915	Various	0.776	Various						
Site Platform Integration													
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development			10.848	3.115		2.666							
Remarks: * SCSS Development for VIRGINIA and TRIDENT Classes													
Development Support Equipment													
Software Development													
Training Development													
Integrated Logistics Support			0.000	0.000		0.150							
Configuration Management													
Technical Data													
GFE													
Subtotal Support			0.000	0.000		0.150							
Remarks:													

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 26 of 27)

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER							
RDT&E, N/BA-5			SSN 688 & Trident Modernization/0604503N			Submarine Tactical Communication System/X1411							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date						
Developmental Test & Evaluation													
Operational Test & Evaluation													
Developmental/Operational T&E	Various	Various	2.775	0.930	Various	0.758	Various						
Tooling													
GFE													
Subtotal T&E			2.775	0.930		0.758							
Remarks:													
Contractor Engineering Support													
Government Engineering Support													
Program Management Support	Various	Various	2.311	0.606	Various	0.625	Various						
Management Support Services													
Travel													
Labor (Research Personnel)													
Overhead													
Subtotal Management			2.311	0.606		0.625							
Remarks:													
Total Cost			15.934	4.651		4.199							
Remarks:													

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 27 of 27)

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
APPROPRIATION/BUDGET ACTIVITY								R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5								0604504N, Air Control Engineering			
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	3.389	14.537	13.394	12.820						Continuing	Continuing
W0718 MARINE AIR TRAFFIC CONTROL AND LANDING SYSTEMS (MATCALs)		5.874	9.291	8.058						Continuing	Continuing
W0993 CARRIER AIR TRAFFIC CONTROL (CATC)		1.667	1.776	2.410						Continuing	Continuing
W1657 AIR TRAFFIC CONTROL IMPROVEMENTS (ATC IMPROVEMENTS)		2.042	2.327	2.352						Continuing	Continuing
W2643 EXPEDITIONARY COMMON AUTOMATIC RECOVERY SYSTEM (ECARS)	3.389	4.954									8.343
Quantity of RDT&E Articles	2	1									3
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element provides for the development, integration, and testing of automated Air Traffic Control (ATC) hardware and software required to provide improved flight safety and more reliable all-weather ATC and landing capabilities ashore and afloat. Funded programs are required to upgrade or replace aging ATC and approach/landing equipment on aircraft, aircraft carriers, amphibious ships, Naval Air Stations, Marine Corps Air Stations and Navy/Marine Corps tactical/expeditionary airfields and remote landing sites. Development of a Global Positioning System (GPS) data link is required to enable the transfer of precise positioning information between ships and aircraft.											
(U) B. JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.											

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Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, Page 1 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:				
								June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME						
RDT&E, N / BA-5		0604504N, Air Control Engineering				W0718 Marine Air Traffic Control and Landing System (MATCALs)						
COST (\$ in Millions)		Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost			5.874	9.291	8.058						Continuing	Continuing
RDT&E Articles Qty		1	1									2
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides for continued development, integration, and testing of hardware and software to meet requirements for all-weather operation and improved flight safety of Air Traffic Control and Landing Systems (ATC&LS) at Navy/Marine Corps (MC) expeditionary airfields. Current program includes approved transition to Air Surveillance and Precision Approach Radar Control System (ASPARCS).												
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:												
1. FY 2000 ACCOMPLISHMENTS:												
- (U) (2.860) Provided systems integration, and non-recurring engineering support to procure and integrate communicaitons, displays, processors, and shelters for the Operation Subsystem/Communications Subsystem (OS/CS) portion of the Air Surveillance and Precision Approach Radar Control System (ASPARCS).												
- (U) (1.217) Provided studies/analysis incident to refining requirements of the ASPARCS . These tasks included providing assistance in acquisition documentation, participation in briefing and program reviews, source selection, and technical oversight.												
- (U) (1.577) Provided systems integration and non-recurring engineering support to develop, integrate and demonstrate the Air Surveillance Radar and the Precision Approach Radar subsystem in the First Article ASPARCS.												
- (U) (.220) Provided engineering and management support to the program office for the development of the ASPARCS.												
2. FY 2001 PLANS:												
- (U) (7.983) Continue to provide systems integration, incremental funding for the First Article and demonstrate the Air Surveillance Radar and the Precision Approach Radar Subsystem in the ASPARCS.												
- (U) (.965) Perform systems integration engineering in support of systems engineering functions for the ASPARCS. This effort is to include assistance in test and evaluation, and technical oversight of the ASPARCS program.												
- (U) (.100) Continue management support to the program office for the development of the ASPARCS.												
- (U) (.243) Portion of extramural program reserved for Small Business Innovation Research (SBIR) assessment in accordance with 15 USC 68.												

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W0718 Marine Air Traffic Control and Landing System (MATCALs)
<p>3. FY 2002 PLANS:</p> <p>(U) (2.722) Final incremental funding for the First Article to provide systems integration and demonstration of the Air Surveillance Radar and the Precision Approach Radar System (ASPARCS).</p> <p>(U) (5.196) Perform systems integration engineering in support of systems engineering functions for the ASPARCS. This effort will include assistance in test and evaluation, Developmental Testing (DT), and technical oversight of the ASPARCS program.</p> <p>(U) (.140) Continue management support to the program office for the development of the ASPARCS.</p>		

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 3 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification				DATE: June 2001																													
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering		PROJECT NUMBER AND NAME W0718 Marine Air Traffic Control and Landing System (MATCAL)																													
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY2000</u></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: center;">4.678</td> <td style="text-align: center;">9.391</td> <td style="text-align: center;">8.171</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">1.196</td> <td style="text-align: center;">-0.100</td> <td style="text-align: center;">-0.113</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: center;">5.874</td> <td style="text-align: center;">9.291</td> <td style="text-align: center;">8.058</td> </tr> </tbody> </table> <p style="margin-top: 20px;">CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net increase of \$1.196 million reflects a \$1.500 million increase for the ASPARCS System, a \$.196 million decrease for reprioritization of requirements within the Navy, a \$.090 million decrease for a Small Business Innovative Research Assessment, and a \$.018 million for Congressional Recission. The FY 2001 net decrease of \$.100 million reflects a \$.014 million decrease for reprioritization of requirements within the Navy, a \$.066 million decrease for a Congressional Reduction, and a \$.020 million decrease for a Congressional Recission. The FY 2002 net decrease of \$.113 million reflects a \$.034 million decrease for reprioritization of requirements within the Navy and a \$.079 million decrease for economic assumptions</p> <p>(U) Schedule: Not Applicable</p> <p>(U) Technical: Not Applicable</p> <p style="margin-top: 20px;">(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>OPN BLI 281500, MATCAL</td> <td style="text-align: center;">10.590</td> <td style="text-align: center;">3.674</td> <td style="text-align: center;">1.005</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table>							<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	(U) FY 2001 President's Budget:	4.678	9.391	8.171	(U) Adjustments from the President's Budget:	1.196	-0.100	-0.113	(U) FY 2002 President's Budget Submit:	5.874	9.291	8.058	<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>To Complete</u>	<u>Total Cost</u>	OPN BLI 281500, MATCAL	10.590	3.674	1.005	Continuing	Continuing
	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>																														
(U) FY 2001 President's Budget:	4.678	9.391	8.171																														
(U) Adjustments from the President's Budget:	1.196	-0.100	-0.113																														
(U) FY 2002 President's Budget Submit:	5.874	9.291	8.058																														
<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>To Complete</u>	<u>Total Cost</u>																												
OPN BLI 281500, MATCAL	10.590	3.674	1.005	Continuing	Continuing																												

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 4 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604504N, Air Control Engineering	W0718 Marine Air Traffic Control and Landing System (MATCALs)	
(U) D. ACQUISITION STRATEGY: Not Applicable			
(U) E. SCHEDULE PROFILE:			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
			<u>TO COMPLETE</u>
(U) Program Milestones	3Q/00 MSII (ASPARCS)		2Q/03 MSIII (ASPARCS)
(U) Engineering Milestones	3Q/00 Complete DII/COE/IT21 Analysis	2Q/01 CDR (ASPARCS)	
	4Q/01 PDR (ASPARCS)		
(U) T&E Milestones			3Q/02 DT (ASPARCS)
			4Q/02 OT (ASPARCS)
(U) Contract Milestones	3Q/00 award for NRE First Article (ASPARCS)		

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Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 5 of 23)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604504N, Air Control Engineering			W0718 Marine Air Traffic Control and Landing System (MATCALs)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/FFP	Lockheed Martin	3.000	7.660	11/00	2.983	11/01			Continuing	Continuing	Continuing
Systems Engineering	WX	NAWCAD S.I.	2.391	0.459	11/00	1.714	11/01			Continuing	Continuing	Continuing
MATCALs Related Prog. Devel.	WX	SPAWAR San Diego										
MATCALs Related Prog. Devel.	WX	NAWCAD S.I.										
SBIR				0.243						Continuing	Continuing	Continuing
Subtotal Product Development			5.391	8.362		4.697				Continuing	Continuing	Continuing
Remarks:												
Training Development	WX	NAWCAD S.I.		0.100	11/00	0.242	11/01			Continuing	Continuing	
Integrated Logistics Support	WX	NAWCAD S.I.		0.191	10/00	0.363	10/01			Continuing	Continuing	
Configuration Management	WX	NAWCAD S.I.	0.205	0.100	11/00	0.048	11/01			Continuing	Continuing	
Technical Data	WX	NAWCAD S.I.		0.200	11/00	0.194	11/01			Continuing	Continuing	
MATCALs Support	WX	NAWCAD S.I.	0.205							Continuing	Continuing	
MATCALs Support	WX	NAWCAD S.I. & San Diego										
Subtotal Support			0.410	0.591		0.847				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604504N, Air Control Engineering			PROJECT NUMBER AND NAME W0718 Marine Air Traffic Control and Landing System (MATCALs)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCAD S.I.		0.100	10/00	2.044	10/01			0.532	2.676	
Operational Test & Evaluation	WX	MCOTEA	0.056	0.100	11/00	0.160	11/01			0.094	0.410	
Subtotal T&E			0.056	0.200		2.204				0.626	3.086	
Remarks:												
Program Management Support	WX	NRL AND NAWCAD S.I.		0.100	07/01	0.280	11/01			Continuing	Continuing	
Travel	WX	NAVAIR	0.017	0.038	10/00	0.030	10/01			0.025	0.110	
Subtotal Management			0.017	0.138		0.310				Continuing	Continuing	
Remarks:												
Total Cost			5.874	9.291		8.058				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 23)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W0993, Carrier Air Traffic Control (CATC)					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		1.667	1.776	2.410						Continuing	Continuing
RDT&E Articles Qty	1										1

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Shipboard Air Traffic Control Centers identify, marshal, and direct aircraft within 50 Nautical Miles (NM) to a ship's Automatic Carrier Landing System (ACLS) and Independent Landing Monitor (ILM). The ACLS and ILM then provide precise automatic control and verification of aircraft during their final approach and landing sequence. Due to the AN/SPN-46 radar's acquisition limitations in rain, a Moving Target Detection (MTD) capability was developed in prior years. This technology is also being adapted for use in the AN/SPN-43 search surveillance radar and in the AN/SPN-35B precision approach radar. The insertion of MTD technology plus an antenna control upgrade constitute the AN/SPN-35C upgrade. This AN/SPN-35C configuration will require development of an interface with the Battle Force Tactical Trainer (BFTT). The AN/SPN-46 radar currently functions in cooperation with an active beacon on the controlled aircraft, and this beacon has an obsolescence problem. Passive Point Source (PPS) development will replace the beacon. Performance Support Systems (PSS) tailored to specific air traffic control systems, such as AN/SPN-43, AN/SPN-35 and AN/SPN-46, are required to improve the performance of system maintainers. PSS includes supplemental training, technical references and logistics information.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (.318) Continued systems engineering and test & evaluation for Passive Point Source for AN/SPN-46.
- (U) (.398) Completed development of AN/SPN-35 MTD (part of AN/SPN-35C).
- (U) (.297) Initiated development of technical documentation for AN/SPN-35C.
- (U) (.600) Completed AN/SPN-35C testing.
- (U) (.054) Continued systems engineering and test & evaluation for AN/SPN-43 MTD.

2. FY 2001 PLANS:

- (U) (.090) Initiate development engineering for AN/SPN-43 halyard protection.
- (U) (.589) Continue systems engineering, design and development of AN/SPN-43 MTD.
- (U) (.342) Develop AN/SPN-35C/Battle Force Tactical Trainer interface.
- (U) (.290) Complete development of technical documentation for AN/SPN-35C.
- (U) (.271) Initiate development of AN/SPN-46 Power Monitor engineering change.
- (U) (.150) Initiate development of AN/SPN-46 Test Support Fixtures.
- (U) (.020) Complete systems engineering and test & evaluation for Passive Point Source for AN/SPN-46.
- (U) (.024) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.

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Exhibit R-2a, RDTEN Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W0993, Carrier Air Traffic Control (CATC)
<p>1. FY 2002 PLANS:</p> <ul style="list-style-type: none">(U) (.023) Complete development of AN/SPN-46 Test Support Fixtures.(U) (.203) Complete development of AN/SPN-46 Power Monitor.(U) (.657) Complete development of AN/SPN-43 MTD.(U) (.904) Continue development of AN/SPN-43 Antenna/Halyard Protection.(U) (.623) Conduct shipboard testing (DT-IIC), OPEVAL support, and safety certification for AN/SPN-35C.		

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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																																			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W0993, Carrier Air Traffic Control (CATC)																																				
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center; border-bottom: 1px solid black;">FY2000</th> <th style="text-align: center; border-bottom: 1px solid black;">FY2001</th> <th style="text-align: center; border-bottom: 1px solid black;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: center;">1.785</td> <td style="text-align: center;">1.796</td> <td style="text-align: center;">1.824</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">-0.118</td> <td style="text-align: center;">-0.020</td> <td style="text-align: center;">0.586</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: center;">1.667</td> <td style="text-align: center;">1.776</td> <td style="text-align: center;">2.410</td> </tr> </tbody> </table> <p style="margin-top: 20px;">CHANGE SUMMARY EXPLANATION:</p> <p style="margin-left: 40px;">(U) Funding: The FY 2000 net decrease of \$.118 million reflects a decrease of \$.098 million for reprioritization of requirements within the Navy, a decrease of \$.013 million for a Small Business Innovation Research assessment, and a decrease of \$.007 million for a Congressional Rescission. FY 2001 net decrease of \$.020 million includes a decrease of \$.003 million for reprioritization of requirements within the Navy, a decrease of \$.004 million for a Congressional Rescission, and a decrease of \$.013 million for a Congressional Reduction. FY 2002 net increase of \$.586 million reflects an increase of \$.623 million for additional AN/SPN-35C (now an ACAT-IVT program) test requirements, a decrease of \$.016 million for reprioritization of requirements within the Navy, and a decrease of \$.021 million for economic assumptions.</p> <p style="margin-left: 40px;">(U) Schedule: In FY 2000 the Passive Point Source production decision has slipped one quarter due to a technical problem which required correcting and retesting. This correction and retesting caused the test completion milestone to slip three quarters. FY 2001 funding adjustments have resulted in rephasing (one quarter slippage) two AN/SPN-46 engineering changes, Test Support Fixtures and Power Monitor. A decision in February 2000 to upgrade the AN/SPN-35C Upgrade from an Abbreviated Acquisition Program to an ACAT-IVT program has necessitated a restructure of this program's schedule. The production start that had been planned for third quarter FY 2000 has been replaced by a Milestone III/Full Rate Production decision in third quarter FY 2003. In the interim an LRIP decision was introduced in third quarter FY 2000, DT-IIC testing in third quarter FY 2002, and OPEVAL in third quarter FY 2003.</p> <p style="margin-left: 40px;">(U) Technical: Not Applicable.</p> <p style="margin-top: 20px;">(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2000</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2001</th> <th style="text-align: center; border-bottom: 1px solid black;">FY 2002</th> <th style="text-align: center; border-bottom: 1px solid black;">To Complete</th> <th style="text-align: center; border-bottom: 1px solid black;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN BLI 283200 Automatic Carrier Landing Sys</td> <td style="text-align: center;">17.940</td> <td style="text-align: center;">18.188</td> <td style="text-align: center;">15.617</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> <tr> <td>OPN BLI 283100 Shipboard Air Traffic Control</td> <td style="text-align: center;">7.361</td> <td style="text-align: center;">7.807</td> <td style="text-align: center;">8.036</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table> <p style="margin-top: 10px;">Related RDT&E:</p> <div style="margin-left: 40px;"> <p>(U) P.E. 0603512N (Carrier Systems Development)</p> <p>(U) P.E. 0604512N (Shipboard Aviation Systems)</p> </div>						FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	1.785	1.796	1.824	(U) Adjustments from the President's Budget:	-0.118	-0.020	0.586	(U) FY 2002 President's Budget Submit:	1.667	1.776	2.410	Line Item No. & Name	FY 2000	FY 2001	FY 2002	To Complete	Total Cost	OPN BLI 283200 Automatic Carrier Landing Sys	17.940	18.188	15.617	Continuing	Continuing	OPN BLI 283100 Shipboard Air Traffic Control	7.361	7.807	8.036	Continuing	Continuing
	FY2000	FY2001	FY2002																																			
(U) FY 2001 President's Budget:	1.785	1.796	1.824																																			
(U) Adjustments from the President's Budget:	-0.118	-0.020	0.586																																			
(U) FY 2002 President's Budget Submit:	1.667	1.776	2.410																																			
Line Item No. & Name	FY 2000	FY 2001	FY 2002	To Complete	Total Cost																																	
OPN BLI 283200 Automatic Carrier Landing Sys	17.940	18.188	15.617	Continuing	Continuing																																	
OPN BLI 283100 Shipboard Air Traffic Control	7.361	7.807	8.036	Continuing	Continuing																																	

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Exhibit R-2a, RD TEN Project Justification
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EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			June 2001	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604504N, Air Control Engineering	W0993, Carrier Air Traffic Control (CATC)		
<p>(U) D. ACQUISITION STRATEGY: The AN/SPN-35C upgrade acquisition will consist of several commercial procurements that will be integrated by the NAWCAD into the final configuration. Four primary contracts will be used, with CLINs for a base year and four options. A list of those anticipated is provided below. In addition, several miscellaneous or ancillary hardware requirements will also be required that will take the form of small purchases, to be made from the open market (for items such as cables, connectors and backshells).</p> <p>Anticipated vendors for the AN/SPN-35C hardware procurement, fabrication, integration and assembly:</p> <p>1. A BOA with Communications and Power Industries. (transmitter from the AN/SPN-46(V)2 precision approach radar program, with a firm fixed price (FFP) contract to follow)</p> <p>2. A BOA with General Kenetics, Inc. (shipboard equipment racks)</p> <p>3. A BOA with Sierra Nevada Corp. (new receiver and RPC, FFP contract to follow)</p> <p>4. An existing contract with BAE (Marconi) provides support for assembly, fabrication and integration of equipment with ancillary materials, e.g. cables and connectors.</p> <p>NAWCAD Air Traffic Control Branch has designed and produced the Main I/O Processor, the console and integrated the COTS display (in house work).</p> <p>All other projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce these technology advancements that either satisfy user requirements (all weather operation) or address supportability and cost of ownership problems.</p>				
(U) Program Milestones	<u>FY 2000</u> 3Q/00 SPN-35C LRIP Decision	<u>FY 2001</u> 3Q-4Q01 SPN-35C Documentation Release <hr/> 4Q/01 SPN-35C BFTT Specification Release <hr/> 4Q/01 PPS Production Decision	<u>FY 2002</u>	<u>TO COMPLETE</u> 2Q/03 SPN-43 MTD Production <hr/> 2Q/03 SPN-46 Test Fixtures Production <hr/> 2Q/03 SPN-46 Power Monitor Production <hr/> 3Q/03 SPN-35C Milestone III Decision <hr/> 2Q/04 SPN-43 Antenna/Halyard Protection Production <hr/> 2Q/05 TPX-42 Flat Panel Display Production <hr/> 2Q/06 SPN-35 Antenna Pedestal and Interface Production
(U) Engineering Milestones	2Q/00 SPN-35C Complete Prototype 3Q/00 PPS Production Prototype	4Q/01 SPN-46 Test Support Fixture PECP &Prod. Prototype 4Q/01 SPN-46 Power Monitor PECP and Prototype	3Q/02 Complete SPN-46 Test Support Fixtures ECP 3Q/02 Complete SPN-46 Power Monitor ECP 4Q/02 Complete SPN-43 MTD development	4Q/03 Complete SPN-43 Ant. Halyard Protection design 4Q/04 Complete TPX-42 Flat Panel Display design and test 4Q/05 Complete SPN-35 Antenna Pedestal and Interface design

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EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			June 2001	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604504N, Air Control Engineering		W0993, Carrier Air Traffic Control (CATC)	
(U) E. SCHEDULE PROFILE CONTINUED:				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>
(U) T&E Milestones	2Q-3Q/00 SPN-35C Prototype Testing	3Q/01 Complete PPS Testing	2Q/02 Complete SPN-46 Test Spt Fixtures Prototype Tests 2Q/02 Complete SPN-46 Pwr Monitor Prototype testing 4Q/02 Complete SPN-43 MTD testing 3Q/02 Complete SPN-35C DT-IIC Testing	3Q/03 SPN-35C OPEVAL
(U) Contract Milestones				

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 12 of 23)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604504N, Air Control Engineering			W0993, Carrier Air Traffic Control (CATC)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NAWCAD Pax River MD	24.029	1.518	11/00	1.308	11/01			Continuing	Continuing	
Subtotal Product Development			24.029	1.518		1.308				Continuing	Continuing	
Remarks:												
Subtotal Support			0.000	0.000		0.000				0.000	0.000	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604504N, Air Control Engineering			PROJECT NUMBER AND NAME W0993, Carrier Air Traffic Control (CATC)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD Pax River MD	1.417	0.020	11/00	0.856	11/01			Continuing	Continuing	
Subtotal T&E			1.417	0.020		0.856				Continuing	Continuing	
Remarks:												
Program Management Support	Various	NAVAIR & NAWCAD Pax	0.866	0.214	11/00	0.246	11/01			Continuing	Continuing	
Small Business Innovation Research				0.024								
Subtotal Management			0.866	0.238		0.246				Continuing	Continuing	
Remarks:												
Total Cost			26.312	1.776		2.410				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W1657, Air Traffic Control Improvements					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		2.042	2.327	2.352						Continuing	Continuing
RDT&E Articles Qty	NOT APPLICABLE										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides for engineering development, integration, adaptation, and testing of new and/or modernized real-time Air Traffic Control (ATC) systems, air navigational aids, landing systems, and ATC communications systems (for example, Navy and Marine air traffic control facilities including Fleet Area Control and Surveillance Facility (FACSFAC)). These systems must be modified to ensure continued interoperability with the National Airspace System (NAS), which is undergoing a major modernization. NAS Modernization initiatives in Project W1657 include the Visual Information Display System (VIDS), as well as incorporating a Navy ground control approach radar capability in the Standard Terminal Automated Replacement System (STARS). Automatic Carrier Landing System (ACLS) Improvements include performance upgrades to various components of the AN/SPN-46, including rearchitecture of the Unit 19 processor, replacement of AN/AYK-14 hardware and software, and IT-21 technology improvements to the radar display. The IT-21 improvements have been allocated to this program as a client of the Advanced Display System (AN/UYQ-70) program. Performance upgrades to the AN/TPX-42A(V) Direct Altitude and Identity Readout (DAIR) systems will provide improved flight data processing, tracking and display capabilities for ATC centers on carriers and L-class ships.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (U) (.200) Completed development of AN/TPX-42 computer upgrade. (see NOTE below) (U) (1.100) Provided systems engineering and test support for ACLS Improvements upgrade. (U) (.442) Initiated development of AN/TPX-42 track processor and associated software upgrade. (U) (.300) Continued engineering development for NAS Modernization. <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> (U) (1.375) Continue development of AN/TPX-42 track processor and associated software upgrade prototype. (U) (.635) Continue development and testing of ACLS Improvements upgrade. (U) (.297) Continue engineering development for NAS Modernization. (U) (.020) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68. <p>NOTE: the computer upgrade will be inserted into production of the CATCC-to-AATC field change (OPN subhead 42MP, project unit MP042) beginning in FY 2001.</p>											

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Exhibit R-2a, RDTEN Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W1657, Air Traffic Control Improvements
<div>1. FY 2002 PLANS:</div> <div>(U) (.937) Continue development and testing of ACLS Improvements upgrade. (U) (1.118) Initiate integration of Track Processor into AN/TPX-42 system and begin testing. (U) (.297) Continue engineering development of NAS Modernization improvements.</div>		

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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																																			
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W1657, Air Traffic Control Improvements																																				
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY2000</u></th> <th style="text-align: center;"><u>FY2001</u></th> <th style="text-align: center;"><u>FY2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: center;">2.185</td> <td style="text-align: center;">2.351</td> <td style="text-align: center;">2.411</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">-0.143</td> <td style="text-align: center;">-0.024</td> <td style="text-align: center;">-0.059</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: center;">2.042</td> <td style="text-align: center;">2.327</td> <td style="text-align: center;">2.352</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net decrease of \$.143 million reflects a decrease of \$.120 million for reprioritization of requirements within the Navy, a decrease of \$.009 million for a Congressional Rescission, and a decrease of \$.014 million for Small Business Innovative Research assessment. The FY 2001 net decrease of \$.024 million includes a decrease of \$.016 million for a Congressional Reduction, a decrease of \$.005 million for a Congressional Rescission, and a decrease of \$.003 million for reprioritization of requirements within the Navy. The FY 2002 net decrease of \$.059 million includes a decrease of \$.031 million for reprioritization of requirements within the Navy, a net decrease of \$.028 million for economic assumptions,</p> <p>(U) Schedule: FY 2000 funding adjustments have delayed by one quarter the development efforts of the AN/TPX-42 Track Processor in FY 2000 and subsequent delivery of the prototype in FY 2001. FY 2001 funding adjustments have delayed by one quarter the production start for AN/TPX-42 Computer Upgrade.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>OPN BLI 284000 National Air Space System</td> <td style="text-align: center;">34.274</td> <td style="text-align: center;">30.019</td> <td style="text-align: center;">43.618</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> <tr> <td>OPN BLI 283100 Shipboard Air Traffic Contr</td> <td style="text-align: center;">7.361</td> <td style="text-align: center;">7.807</td> <td style="text-align: center;">8.036</td> <td style="text-align: center;">Continuing</td> <td style="text-align: center;">Continuing</td> </tr> </tbody> </table> <p>Related RDT&E: Not Applicable</p>						<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	(U) FY 2001 President's Budget:	2.185	2.351	2.411	(U) Adjustments from the President's Budget:	-0.143	-0.024	-0.059	(U) FY 2002 President's Budget Submit:	2.042	2.327	2.352	<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>To Complete</u>	<u>Total Cost</u>	OPN BLI 284000 National Air Space System	34.274	30.019	43.618	Continuing	Continuing	OPN BLI 283100 Shipboard Air Traffic Contr	7.361	7.807	8.036	Continuing	Continuing
	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>																																			
(U) FY 2001 President's Budget:	2.185	2.351	2.411																																			
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OPN BLI 283100 Shipboard Air Traffic Contr	7.361	7.807	8.036	Continuing	Continuing																																	

R-1 SHOPPING LIST - Item No. 117

UNCLASSIFIED

Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 17 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W1657, Air Traffic Control Improvements		
(U) D. ACQUISITION STRATEGY: All projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce technology advancements that either satisfy emergent user requirements or address supportability and cost of ownership problems.				
(U) E. SCHEDULE PROFILE:				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>
(U) Program Milestones	2Q/00 NAS Modernization VIDS Production	2Q/01 NAS Modernization Program Milestone III (Production Decision)	2Q/02 IT21 insertion into SPN-46 PIP Production	2Q/04 ACLS Unit 19 Mod Kit Production
		2Q/01 TPX-42 Computer Upgrade Production		3Q/04 TPX-42 Track Processor Production
(U) Engineering Milestones	3Q/00 ACLS Improvement Unit 19 Prototype Delivery	3Q/01 TPX-42 Track Proc. Production Prototype		2Q/06 SPN-46 Computer (AYK-14) Mod Kit Production
(U) T&E Milestones	3Q/00 ACLS Improvement IT-21 Testing	4Q/01 ACLS Unit 19 complete test bed installation		4Q/05 Complete SPN-46 H/W and S/W Upgrade (AYK-14)
	3Q-4Q/00 TPX-42 Computer Upgrade Testing			4Q/03 Complete ACLS Unit 19 flight testing and ILS documentation update
				2Q/04 TPX-42 Track Processor system test completed
(U) Contract Milestones				

R-1 SHOPPING LIST - Item No. 117

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 18 of 23)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604504N, Air Control Engineering			W1657, Air Traffic Control Improvements						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NAWCAD Pax River MD	36.713	1.914	11/00	1.135	11/01			Continuing	Continuing	
Primary Hardware Development	WR	SPAWARCEN Chasn SC	0.328	0.297	11/00	0.297	11/01			Continuing	Continuing	
Systems Engineering	WR	SPAWARCEN S.Diego CA	0.050									
Primary Hardware Development	WR	NAWCTSD Orlando FL	0.075									
Subtotal Product Development			37.166	2.211		1.432				Continuing	Continuing	
Remarks:												
Training Development	Cmp/TM	Apex Technology	0.060	0.030	01/00	0.030	01/02				0.120	0.120
Subtotal Support			0.060	0.030		0.030				0.000	0.120	
Remarks:												

R-1 SHOPPING LIST - Item No. 117

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 19 of 23)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W1657, Air Traffic Control Improvements				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD Pax River MD	2.456			0.815	11/01			Continuing	Continuing	
Subtotal T&E			2.456	0.000		0.815				Continuing	Continuing	
Remarks:												
Program Management Support	Various	NAVAIR & NAWCAD Pax	2.854	0.066	11/00	0.075	11/01			Continuing	Continuing	
Small Business Innovation Research				0.020						0.000		
Subtotal Management			2.854	0.086		0.075				Continuing	Continuing	
Remarks:												
Total Cost			42.536	2.327		2.352				Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 117

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 20 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering				PROJECT NUMBER AND NAME W2643, Expeditionary Common Automatic Recovery System					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	3.389	4.954	0.000	0.000							8.343
RDT&E Articles Qty	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The USMC's Marine Air Ground Task Force (MAGTF) requires the capability to recover Aviation Combat Element (ACE) aircraft and Unmanned Aerial Vehicles (UAVs) reliably in an expeditionary environment. The current landing aid systems are antiquated, require considerable lift and setup time, and are primarily fixed base systems. The objectives of the Expeditionary Common Automatic Recovery System (ECARS) specifically include the development of a landing systems beacon replacement for both manned and unmanned aircraft.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <p>(U) (1.329) Continued systems engineering, test and evaluation of ECARS.</p> <p>(U) (1.121) Completed development of a prototype landing system beacon for manned/unmanned aircraft.</p> <p>(U) (2.381) Continued developing system upgrades for extended range capability.</p> <p>2. FY 2001 PLANS: Not applicable.</p> <p>3. FY 2002 PLANS: Not applicable</p>											

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 21 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	
		June 2001	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDTE&E, N / BA-5	0604504N, Air Control Engineering	W2643, Expeditionary Common Automatic Recovery System	
(U) B. PROGRAM CHANGE SUMMARY:			
	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget:	4.973	0.000	0.000
(U) Adjustments from the President's Budget:	-0.019	0.000	0.000
(U) FY 2002 President's Budget Submit:	4.954	0.000	0.000
CHANGE SUMMARY EXPLANATION:			
(U) Funding: The FY 2000 reduction of \$.019 million for a Congressional Rescission.			
(U) Schedule: Not Applicable.			
(U) Technical: Not Applicable.			
(U) C. OTHER PROGRAM FUNDING SUMMARY:			
Related RDT&E:			
(U) P.E. 0603860F (JPALS)			
(U) P.E. 0603860N (JPALS)			
(U) P.E. 0603640M (MARINE CORPS ADVANCED TECHNOLOGY DEMONSTRATIONS)			

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Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 22 of 23)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, Air Control Engineering	PROJECT NUMBER AND NAME W2643, Expeditionary Common Automatic Recovery System		
(U) D. ACQUISITION STRATEGY: Purpose of project is to develop capability demonstrations. Acquisition approach will direct efforts toward providing useful avionics off-the-shelf alternatives.				
(U) E. SCHEDULE PROFILE:				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>
(U) Program Milestones		TBD		
(U) Engineering Milestones	TBD			
(U) T&E Milestones		TBD		
(U) Contract Milestones	TBD			

R-1 SHOPPING LIST - Item No. 117

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05					R-1 ITEM NOMENCLATURE ENHANCED MODULAR SIGNAL PROCESSOR (EMSP)/ 0604507N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	0.871	0.867	1.013							
Enhanced Modular Signal Processor/V1440*	0.871	0.000	0.000							
Enhanced Modular Signal Processor/Q1440*	0.000	0.867	1.013							
<p>Quantity of RDT&E Articles</p> <p>*The PEO identification changes from PEO(USW) to PEO(MUW) starting in FY 2001 due to the merger of PEO(USW) and PEO(MIW). Therefore, the prefix V changes to Q.</p> <p>A. Mission Description and Budget Item Justification: This program improves Navy Signal Processing Hardware and Software.</p> <p>PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <p>(\$0.471) Continued joint program initiative and formed a joint Peer Review Process (PRP) to develop and implement a Common Commercial-Off-The-Shelf (COTS) signal processing solution for the DDG51 AN/SQQ-89 Surface ASW Combat System, Carrier Vessel-Tactical Support Center (CV-TSC), SH-60 Airborne Low Frequency Sonar (ALFS), and P-3 Special Projects systems platforms using Common Operating Environment/Tactical Advanced Signal Processing (COE/TASP) as a foundation.</p> <p>(\$0.400) Completed Final Vector Signal Imaging Processing (VSIP) Library Specification Version 1.0 and VISP Test Suite (CoreLite) for COE/TASP. Completed Draft Version 1.0 Message Passing Interface/Real Time (MPI/RT) Standard Specification. COE/TASP will allow common COTS signal processing software applications (which are hardware-independent) to run on multiple platforms (DDG51 AN/SQQ-89, CV-TSC, SH-60 ALFS, and P-3 Special Projects), thus replacing aging Mil Spec Signal Processors.</p> <p>2. (U) FY 2001 PLAN:</p> <p>(\$0.452) Via the Peer Review Process (PRP), complete preliminary design of a Common COTS signal processing solution for the DDG51 AN/SQQ-89 Surface ASW Combat System, CV-TSC, SH-60 Airborne Low Frequency Sonar (ALFS), and P-3 Special Projects systems platforms using COE/TASP.</p>										

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Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	June 2001																								
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE																									
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05		ENHANCED MODULAR SIGNAL PROCESSOR(EMSP) / 0604507N																									
<p>(\$0.400) Support Common COTS signal processing and other Navy applications using the Final Vector Signal Image Processing (VSIP) Library for Common Operating Environment /Tactical Advanced Signal Processor (COE/TASP). Continue to work with industry to develop and enhance capabilities/functions for VSIP Library. Initiate migration of Message Passing Interface/Real Time (MPI/RT) functionality into the Common Object Request Broker Agent (CORBA).</p> <p>(\$0.015) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p> <p>3. (U) FY 2002 PLAN:</p> <p>(\$0.613) Via the Peer Review Process (PEP) complete detailed/final design of a Common COTS signal processing solution for DDG5 AN/SQQ-89 Surface ASW Combat System, CV-TSC, SH-60 Airborne Low Frequency Sonar (ALFS), and P-3 Special Projects systemsplatforms</p> <table> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget:</td> <td>0.965</td> <td>0.875</td> <td>1.139</td> </tr> <tr> <td>Appropriated Value:</td> <td>0.970</td> <td>0.875</td> <td></td> </tr> <tr> <td>Adjustment to FY 2000/2001 Appropriated Value/</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2001 President's Budget:</td> <td>-0.099</td> <td>-0.008</td> <td>-0.126</td> </tr> <tr> <td>FY 2002 PRES Budget Submit:</td> <td>0.871</td> <td>0.867</td> <td>1.013</td> </tr> </tbody> </table> <p>Funding: FY 2000 decrease for SBIR (-\$0.019), N6 Sponsor BTR (-\$0.050), and minor pricing adjustments (-\$0.030). FY 2001 decrease for minor pricing adjustments (-\$0.008). FY 2002 decrease for N6 Sponsor adjustment (-\$0.050) and PBD 807 - Navy Offsets (-\$0.080), and minor pricing adjustments (\$0.004).</p> <p>Schedule: Not applicable.</p> <p>Technical: Not applicable.</p>					FY 2000	FY 2001	FY 2002	FY 2001 President's Budget:	0.965	0.875	1.139	Appropriated Value:	0.970	0.875		Adjustment to FY 2000/2001 Appropriated Value/				FY 2001 President's Budget:	-0.099	-0.008	-0.126	FY 2002 PRES Budget Submit:	0.871	0.867	1.013
	FY 2000	FY 2001	FY 2002																								
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FY 2002 PRES Budget Submit:	0.871	0.867	1.013																								

R-1 SHOPPING LIST - Item No. 118 - 2 of 118 - 6

Exhibit R-2, RDT&E Budget Item Justification
 (Exhibit R-2, page 2 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05						R-1 ITEM NOMENCLATURE ENHANCED MODULAR SIGNAL PROCESSOR(EMSP)/ 0604507N			
C. Other Program Funding Summary									
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Complete</u> <u>Cost</u> _____
OPN P-1 Line Item 95 (B.L. 298000/72DC)									
	0.9	1.5	1.3						
D. Acquisition Strategy: a) Complete joint program initiatives to implement COTS signal processing solution across various platforms. b) Assist current EMSP user programs in transporting their EMSP-based application software to COTS. c) Seek industry standard middleware products that isolate Navy application software products from future changes in COTS hardware.									

R-1 SHOPPING LIST - Item No. 118 - 3 of 118 - 6

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 3 of 6)

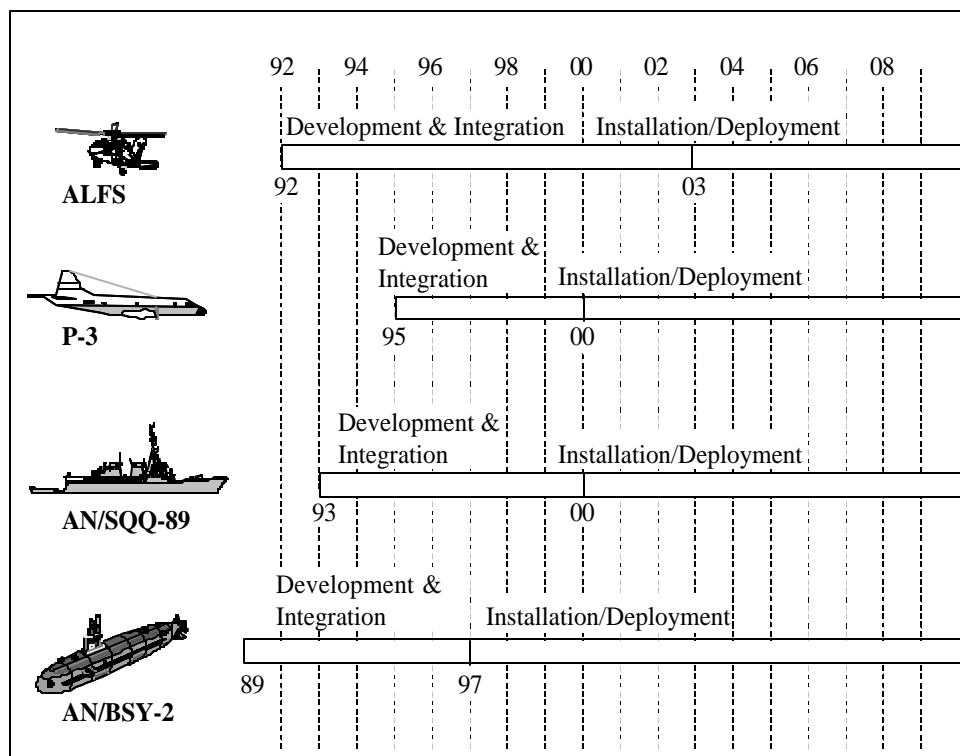
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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-05	ENHANCED MODULAR SIGNAL PROCESSOR/ 0604507N	

E. Schedule Profile



R-1 SHOPPING LIST - Item No. 118 - 4 of 118 - 6

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 4 of 6)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/ BA-05			PROGRAM ELEMENT 0604507N			PROJECT NAME AND NUMBER EMSP V1440/Q1440						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Signal Processor COTS Technology	WR/MP	MSU/GTRI/SPAWAR	2.318	0.400	12/99	0.400	12/00	0.400	12/01	CONT.	CONT.	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			2.318	0.400		0.400		0.400		0.000	CONT.	
Remarks:												
Development Support Equipment												
Software Engineering Support	WR	NAWC/AD	2.664	0.115	11/99	0.080	11/00	0.100	11/01	CONT.	CONT.	
Common Processing	Var.	Misc.		0.118	02/00	0.104	11/00	0.313	Var.	CONT.	CONT.	
Miscellaneous	PD/Var.	Misc.		0.208	Var.	0.200	Var.	0.200	Var.	CONT.	CONT.	
											0.000	
											0.000	
											0.000	
Subtotal Support			2.664	0.441		0.384		0.613		0.000	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 118 - 5 of 118 - 6

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

UNCLASSIFIED

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-05			PROGRAM ELEMENT 0604507N			PROJECT NAME AND NUMBER EMSP V1440/Q1440							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation											0.000		
Operational Test & Evaluation											0.000		
Tooling											0.000		
GFE											0.000		
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000		
Remarks:													
Contractor Engineering Support											0.000		
											0.000		
Program Management Support	CPFF	TWD	0.175	0.030	05/00	0.083	02/01	0.000			CONT.		
											0.000		
											0.000		
											0.000		
Subtotal Management			0.175	0.030		0.083		0.000		0.000	CONT.		
Remarks:													
Total Cost			5.157	0.871		0.867		1.013		0.000	CONT.		
Remarks:													

R-1 SHOPPING LIST - Item No. 118 - 6 of 118 - 6

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						0604512N Shipboard Aviation Systems					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost		8.675	9.627	16.375						Continuing	Continuing
W2232 CV Launch & Recovery Systems		8.675	9.627	16.375						Continuing	Continuing
Quantity of RDT&E Articles		1	2	3							6
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Navy unique project addresses the Engineering and Manufacturing Development (EMD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program is funded under EMD because it encompasses engineering and manufacturing development of new end-items prior to production approval decision. This program includes the EMD phase of the following systems under Project W2232, including the funding of engineering development models (EDM):</p> <ul style="list-style-type: none">- (U) Improved Carrier Optical Landing System (ICOLS), includes the Improved Fresnel Lens Optical Landing System (IFLOLS) and the Long Range Line-up System (LRLS).- (U) Aviation Data Management and Control System (ADMACS), including the Integrated Shipboard Information System (ISIS), the Advanced Launch and Recovery Control System (ALRCS), and Virtual Imaging System for Approach and Landing (VISUAL) increments.- (U) Moriah, the integrated wind measurement and meteorological system.- (U) Advanced Arresting Gear Engine (AAGE): The AAGE replaces the MK7 arresting gear engine, which has reached the limits of its operating capability.- (U) Cost Reduction and Effectiveness Improvement Initiative (CREI) Aircraft Carrier Arresting Gear Hydraulic Fluid: This program seeks to replace the unique hydraulic fluid used in the arresting gear systems with a commercially available product. The commercial product will be less expensive, contain system component protection and will reduce the life cycle cost of the system. <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end items prior to production approval decision.</p>											

R-1 SHOPPING LIST - Item No. 119

UNCLASSIFIED

Exhibit R-2, RDTE Budget Item Justification
(Exhibit R-2, page 1 of 10)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems					W2232 CV Launch & Recovery Systems					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		8.675	9.627	16.375						Continuing	Continuing
RDT&E Articles Qty		1	2	3							6
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Navy unique project addresses the Engineering and Manufacturing Development (EMD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program is funded under EMD because it encompasses engineering and manufacturing development of new end-items prior to production approval decision. This program includes the EMD phase of the following systems under Project W2232, including the funding of engineering development models (EDM):</p> <p>- (U) Improved Carrier Optical Landing System (ICOLS): ICOLS provides longer range, higher accuracy visual landing aids (VLA) for pilots landing on aircraft carriers and includes the Improved Fresnel Lens Optical Landing System (IFLOLS) and the Long Range Line-up System (LRLS).</p> <p>- (U) Aviation Data Management and Control System (ADMACS): ADMACS is a real-time, tactical, local area network (LAN) configuration managed for the specific support of the Air Department and the Aircraft Launch and Recovery Equipment (ALRE) data requirements on ships. It also provides connectivity among ALRE systems such as ICOLS, ISIS, ALRCS, and VISUAL; and links Air Operations with other onboard tactical and support networks.</p> <p>- (U) Integrated Shipboard Information System (ISIS): ISIS employs existing and emerging technology to enable rapid input, collection, processing and distribution of relevant air operations information and then display this information on electronic monitors in all air operations work centers throughout the ship.</p> <p>- (U) Advanced Launch and Recovery Control System (ALRCS): ALRCS introduces modern, modularized computer control systems to the catapults and arresting gear on aircraft carriers, which will support Condition Based Maintenance (CBM), enhance performance, and reduce life cycle costs.</p> <p>- (U) Moriah: Moriah integrates standardized digital wind and meteorological sensors to produce an affordable, LAN compatible, wind suite for all classes of air capable Navy ships.</p> <p>- (U) Virtual Imaging System for Approach and Landing (VISUAL): VISUAL provides ship's force, Landing Signal Officer (LSO), and pilots with enhanced images of the aircraft and ship during launch and recovery operations in low visibility, day and night conditions.</p> <p>- (U) Advanced Arresting Gear Engine (AAGE): The AAGE replaces the MK7 arresting gear engine, which has reached the limits of its operating capability.</p> <p>- (U) Cost Reduction and Effectiveness Improvement Initiative (CREI) (Aircraft Carrier Arresting Gear Hydraulic Fluid): This program seeks to replace the unique hydraulic fluid used in the arresting gear systems with a commercially available product. The commercial product will be less expensive, contain system component projection, and will reduce the life cycle cost of the systems.</p>											

R-1 SHOPPING LIST - Item No. 119

UNCLASSIFIED

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 10)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$4.042) Initiated the EMD phase of the VISUAL program. Achieved Milestone II , awarded EMD contract, and conducted Preliminary Design Review (PDR). Provided engineering and management support to the program. - (U) (\$1.559) Continued pre-Milestone I/II activities for Moriah. Coordinated with SPAWAR and NAVSEA finalizing acquisition strategy implementation, initiated Request for Procurement (RFP) package and provided engineering and management support to the program. - (U) (\$1.351) Completed design of shore-based IFLOLS and produced EDM unit. Conducted Technical and Operational Evaluations and achieved Milestone III decision and transition to Full Rate Production (FRP). - (U) (\$1.273) ALRCS: Assessed hardware and software architecture for Condition Based Maintenance, embedded training, and operator workload reduction. Implemented process modeling and simulation of catapult launch evolution and system performance specification development. Provided engineering and management support to the program. - (U) (\$ 0.450) Completed the design and integration documentation for the CV/CVN ADMACS/ISIS. Achieved Milestone III. Provided engineering and management support to the program. <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$6.329) Conduct VISUAL Critical Design Review (CDR) and produce two (2) CV/CVN EDM units. Provide engineering and management support to the program. - (U) (\$1.400) Finalize and release RFP for the wind portion of the Moriah program. Achieve MS I/II and award EMD contract. Complete PDR and initiate Engineering and Manufacturing Development (EMD) of the wind system. Provide engineering and management support to the program. - (U) (\$1.608) Continue development of ALRCS system architecture and performance specification. Develop Interface Control Document to support AAGE development program. Expand process modeling and simulation effort to include catapult maintenance functions and "man-in-the-loop" functions. Stand up ALRCS Development Lab and initiate sensor/software studies to determine workload and manning reduction impacts for candidate automation initiatives. Provide engineering and management support to the program. - (U) (\$0.290) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68. 		

R-1 SHOPPING LIST - Item No. 119

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 3 of 10)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	June 2001
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS: continued</p> <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$6.172) Conduct VISUAL Developmental Testing on CV/CVN E&MD units and produce two (2) LHA/LHD EMD units. Provide engineering and management support to the program.- (U) (\$0.696) Moriah - Complete CDR, deliver EMD unit and conduct DT and OT for E&MD of wind system. Achieve MS III and provide engineering and management support to the program.- (U) (\$ 1.744) ALRCS -Continue modeling and simulation effort. Complete system specification and solicit industry for technology and system solutions. Prepare Request for Proposals and Milestone documentation. Solicit for ALRCS system development contract and complete source selection process. Complete Milestone II approval process. Provide engineering and management support to the program.- (U) (\$7.688) Evaluate AAGE proposals and select contractor. Achieve Milestone II authorization. Award contract and initiate system design effort. Complete System Requirements Review. Evaluate critical technologies through subscale component, subsystem and system testing. Initiate preliminary design of full scale hardware. Provide engineering and management support to the program. *-(U) (\$0.075) Conduct PDR for Commercial Arresting Gear in support of Cost Reduciton & Effectiveness Improvement Initiative (CREI). <p>* THIS PROGRAM WAS TRANSFERRED FROM THE 603512N PROGRAM ELEMENT TO PROPERLY EXECUTE THE ADVANCED ARRESTING GEAR ENGINE (AAGE) PROGRAM. FY2001 PROGRAM PLANS WERE REFLECTED IN THE 603512N P.E. , PROJECT UNIT W1723.</p>		

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 4 of 10)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	W2232 - CV Launch & Recovery Systems	
(U) B. PROGRAM CHANGE SUMMARY:			
	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget:	9.002	9.833	8.669
(U) Adjustments from the President's Budget:	-0.327	-0.206	7.706
(U) FY 2002 President's Budget Submit:	8.675	9.627	16.375
CHANGE SUMMARY EXPLANATION:			
(U) Funding:			
- (U) The FY 2000 net decrease of \$0.327 million reflects a decrease of \$0.089 million for a Small Business Innovative Research assessment, a decrease of \$0.203 million for a reprioritization of requirements within the Navy, and a \$0.035 million decrease for a Congressional Recission.			
- (U) The FY 2001 net decrease of \$0.206 million reflects a \$0.115million decrease for reprioritization of requirements within the Navy, a \$0.069 million decrease for a Congressional Reduction, a \$0.001 million decrease for economic assupmtions, and a \$0.021 million decrease for a Congressional Recission.			
- (U) The FY 2002 net increase of \$7.702 million consists of a \$0.075 million increase for CREI Arresting Gear Fluid Improvement, an increase of \$7.688 million transfer from 603512N to properly reflect execution of the AGE program, and a \$0.061 million decrease for economic assumption.			

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Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 5 of 10)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001													
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 - CV Launch & Recovery Systems														
<p>(U) Schedule: The ADMACS/ISIS MSIII was delayed from 4Q/99 to 1Q/00 due to delay in resolution of software and integration issues. The ALRCS MSII was delayed from 4Q FY01 to 4Q FY02 and MSIII was delayed from 3Q/04 to 2Q/08 due to emergent technical issues on other projects which reprioritized program effort. Moriah program has slipped due to delays in receiving program documentation and directed changes to the acquisition strategy. VISUAL slipped milestone II from 2Q FY00 to 3Q FY00 due to delays in source selection. VISUAL DT/OT and MSIII delays reflect new EMD contractor's planned schedule. Separate VISUAL test events and Milestone III's for CV/CVN and LHA/LHD are planned.</p> <p>(U) Technical: Not Applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table><thead><tr><th></th><th><u>FY 2000</u></th><th><u>FY 2001</u></th><th><u>FY 2002</u></th><th><u>To Complete</u></th><th><u>Total Cost</u></th></tr></thead><tbody><tr><td>OPN, BLI 421600, A/C Launch & Recovery)</td><td>39.618</td><td>35.801</td><td>27.500</td><td>Continuing</td><td>Continuing</td></tr></tbody></table> <p>Related RDT&EP.E. 0603512N (Carrier Systems Development)</p>						<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>To Complete</u>	<u>Total Cost</u>	OPN, BLI 421600, A/C Launch & Recovery)	39.618	35.801	27.500	Continuing	Continuing
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>To Complete</u>	<u>Total Cost</u>											
OPN, BLI 421600, A/C Launch & Recovery)	39.618	35.801	27.500	Continuing	Continuing											

R-1 SHOPPING LIST - Item No. 119

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery
<p>(U) D. ACQUISITION STRATEGY:</p> <p>IFLOLS is a Technical Data Package (TDP) procurement. The Navy prepared a complete technical data package, based on the EDMs delivered in FY 1997. A production contract was awarded to Hughes Technical Service, Indianapolis, IN in May 1999 (now Raytheon Technical Services).</p> <p>LRLS: The Navy prepared a performance specification and competitively awarded a fixed-price contract to deliver three EDMs in FY 1997, with fixed-price production options.</p> <p>ADMACS/ISIS is being designed and integrated by the Navy. The Navy will procure hardware/software from multiple sources, integrate the hardware/software, and deliver the system to Navy shipyards for installation.</p> <p>Moriah: The Navy is preparing a performance specification and will competitively award a contract for EMD with production options.</p> <p>VISUAL: The Navy prepared a performance specification and competitively awarded a cost plus incentive fee contract to develop/deliver EDMs, with fixed-price successive target production options.</p> <p>ALRCS: The Navy is preparing a performance specification and will complete the system integration contract. Production systems will be competitively procured.</p> <p>AAGE: The Navy will competitively award up to two EMD contracts to develop the AAGE for evaluation at the NAWCADLKE Runway Arrested Landing Site followed by a single fixed price contract award for production.</p>		

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 7 of 10)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:	
			June 2001	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	0604512N Shipboard Aviation Systems	W2232 CV Launch & Recovery Systems		
(U) E. SCHEDULE PROFILE:				
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>TO COMPLETE</u>
(U) Program Milestones	IFLOLS: 2Q/00 MSIII ADMAC/ISIS: 1Q/00 MSIII VISUAL: 3Q/00 MSII	Moriah: 3Q/01 MS I/II	Moriah: 4Q/02 MSIII ALRCS: 4Q/02 MSII AAGE: 2Q/02 MSII	VISUAL(CV): 3Q/03 MSIII VISUAL(LH): 3Q/04 MSIII ALRCS: 2Q/08 MSIII AAGE: 2Q/08 MSIII
(U) Engineering Milestones	VISUAL: 4Q/00 PDR	Moriah: 4Q/01 PDR VISUAL: 4Q/01 CDR	CREI: 2Q/02 PDR AAGE: 2Q/02 SRR Moriah: 1Q/02 CDR AAGE: 2Q/02-2Q/03 PDR	CREI: 4Q/03 CDR ALRCS: 2Q/03 SRR ALRCS: 4Q/03 PDR
(U) T&E Milestones	IFLOLS: (Shore) 2Q/00 DT/OA		Moriah: 1Q-3Q/02 DT Moriah: 3Q/02 OT VISUAL(CV): 3Q-4Q/02 DT	VISUAL(LH): 1Q/04 OT VISUAL(CV): 1Q/03 OT VISUAL(LH): 3Q-4Q/03 DT
(U) Contract Milestones	VISUAL: 3Q/00 EMD Award	Moriah: 1Q/01 RFP Moriah: 3Q/01 EMD Award	ALRCS: 2Q/02 RFP AAGE: 2Q/02 EMD AWARD*	ALRCS: 1Q/03 EMD Award
*Pre-Award efforts in FY01 under 603512N Program Element, transferred to 604512N FY2002				

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Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 8 of 10)

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CLASSIFICATION:

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental testing(VISUAL/Moriah)	WX	NAWCAD,Lakehurst		0.150	11/00	1.551	11/01			1,650.000	1,651.701	
Operational testing(Moriah)	WX	NAWCAD,Lakehurst				0.300	11/01				0.300	
Subtotal T&E			0.000	0.150		1.851		0.000		1,650.000	1,652.001	
Remarks:												
Program Management Support	RX	NAWCAD Patuxent River		0.207	03/01	0.210	03/02			Continuing	Continuing	
Travel	WX	NAWCAD Patuxent River		0.035	11/00	0.035	11/01			Continuing	Continuing	
SBIR Assessment				0.290								
Subtotal Management			0.000	0.532		0.245		0.000		Continuing	Continuing	
Remarks:												
Total Cost			40.886	9.627		16.371		0.000		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 119

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 10 of 10)

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE NTDS Improv./ Common C&D / 0604518N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	7.715	3.686	5.392						CONT	CONT
NTDS Software Improvement/Common C&D/K1604	7.715	3.686	5.392						CONT	CONT
Quantity of RDT&E Articles										

* CC&D program was funded in FY00/01 under the PE: 0603582N, Combat Systems Integration (CSI), Project Unit: S0164

A. Mission Description and Budget Item Justification

FY00-FY01 The ACDS Block 1 program replaces the vintage Naval Tactical Data System (NTDS) operating systems and applications algorithms and implements advanced concepts for Tactical Data Systems upgrades for surface combatants in response to future threats, operational deficiencies and new and existing operational requirements. The increased emphasis on joint operations and littoral warfare has improved the importance of ACDS Block 1's joint operability and improved littoral warfare capabilities. The program's objective is to develop integrated real time command and control systems that will increase ship's operational capabilities; promote standardization and introduce new shipboard tactical displays and support equipment; and provide integration between sensor/weapons system which are organic to and outside the battle force. This program provides for significant Combat Direction System (CDS) improvements including implementation of the Joint Tactical Information Data System (JTIDS/Tactical Data Information Link Joint (TADILJ) (LINK 16) message standard to support interoperability/joint operations with U.S. Navy/Air Force/Marine and NATO forces; implementation of the Aegis Tactical Executive System (ATES); and integration and interface with the Command and Control Processor (C2P), the Cooperative Engagement Capability (CEC), and Ship's Self Defense System (SSDS).

FY02-07 Common Command and Decision (CC&D) capability is a pre-planned product improvement (P3-I) to the Aegis Weapon System and the Ship Self-Defense System (SSDS) Mk 2 that replaces the command and decision capability presently in these systems with a common computer program. This effort will avoid future life-cycle costs by reducing the number of computer programs that must be maintained, enable the navy to field new or modified warfighting capability by eliminating the redundant, conflicting processing present in existing systems. CC&D is a critical step toward developing systems that will resolve long-term interoperability problems and achieve improvements in the air picture.

R-1 SHOPPING LIST - Item No. 120 - 1 of 120 - 6

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/ BA 5	PROGRAM ELEMENT NAME AND NUMBER CIC Conversion/ 0604518N	PROJECT NAME AND NUMBER: NTDS Improv./ Common C&D / 0604518N Project K1604

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 Accomplishments:
 - (U) (\$3.343) Participated in CEC Baseline 3 DT/OT events in support of CEC's TECHEVAL and OPEVAL.
 - (U) (\$1.551) Corrected software and hardware trouble reports associated with shipboard deliveries of ACDS Block 1 Level 2.1.x onboard CVN 68 and LHD 7, and upgraded CVN 67, CVN 69 and LHD 1 with 2.1.x software build.
 - (U) (\$2.821) Completed interoperability corrections & conducted Navy and Joint Link Certification, followed by a Battle Group Testing of ACDS Block 1 and CEC Baseline 2.
2. (U) FY 2001 Plan:
 - (U) (\$3.606) Support TECHEVAL and OPEVAL with CEC and correct any deficiencies.
 - (U) (\$0.080) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.
3. (U) FY 2002 Plan:
 - (U) (\$3.450) Continue Design Engineering.
 - (U) (\$0.650) Continue Acquisition Management Support.
 - (U) (\$1.292) Continue Technical Management Support.

	FY 2000	FY 2001	FY 2002
FY 2001 President's Budget Submit:	8.082	3.720	0.000
Appropriated Value:	8.126	3.720	
Adjustments to FY2000/2001 Appropriated Value/ FY2001 President's Budget:	-0.411	-0.034	5.392
FY 2002 PRES Budget Submit:	7.715	3.686	5.392

Funding:

FY 2000: Funding decrease due to Small Business Innovation Research adjustment (\$-0.157) and minor pricing adjustments (-\$0.254).

FY2001: Funding decrease due to Proportionate Rescission (-\$0.034).

FY2002: Funding increase due to transfer of Common C&D from PE0603582N/S0164 (+\$13.700) and minor pricing adjustments (+0.016), reductions to off-set Navy Priorities (-\$8.300) and reduction for NWCF rates (-\$0.024).

Schedule: N/A

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Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: JUNE 2001																								
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N/ BA 5		PROGRAM ELEMENT NAME AND NUMBER CIC Conversion/ 0604518N			PROJECT NAME AND NUMBER: NTDS Improv./ Common C&D / 0604518N Project K1604																										
<p>C. Other Program Funding Summary</p> <p>O&M,N 0708017N/46N80 Ship System Tactical</p> <table> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> <th><u>FY 2003</u></th> <th><u>FY 2004</u></th> <th><u>FY 2005</u></th> <th><u>FY 2006</u></th> <th><u>FY 2007</u></th> <th>To <u>Complete</u></th> <th><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>NTDS</td> <td>13.909</td> <td>13.922</td> <td>14.137</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>CONT.</td> <td>CONT.</td> </tr> </tbody> </table> <p>D. Acquisition Strategy:</p> <p>NTDS: ACDS Block 1 program will be completed in FY 2001 upon the completion of CEC Baseline 2 TECHEVAL and OPEVALs. Until then the hardware and software corrections will be made by Raytheon Systems Company via a sole source contract, N00024-97-C-5466. The life cycle maintenance and software support agent for ACDS Block 1 is NAVSEA Damneck.</p> <p>Common C&D: Three Technical Instructions were awarded to Lockheed Martin Government Electronic Systems (Moorestown, NJ), Raytheon Naval and Maritime Systems (San Diego, CA), and Digital Systems Resource (Fairfax, VA) to conduct Design Engineering to define the CC&D program in support of Milestone I/II Decision in FY 2005. This will provide CC&D capability to Aegis and Ship Self Defense System (SSDS) Surface Ships in FY 2010.</p>											<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To <u>Complete</u>	<u>Total Cost</u>	NTDS	13.909	13.922	14.137						CONT.	CONT.
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To <u>Complete</u>	<u>Total Cost</u>																					
NTDS	13.909	13.922	14.137						CONT.	CONT.																					

R-1 SHOPPING LIST - Item No. 120 - 3 of 120 - 6

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 3 of 6)

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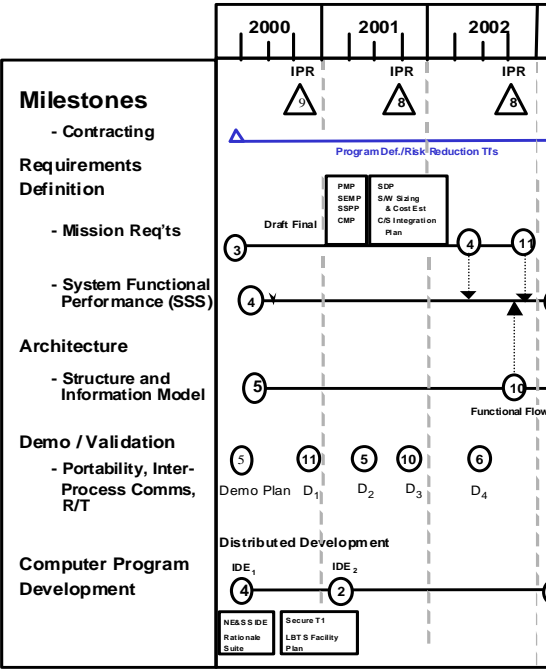
CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/ BA 5	PROGRAM ELEMENT NAME AND NUMBER CIC Conversion/ 0604518N	PROJECT NAME AND NUMBER: NTDS Improv./ Common C&D / 0604518N Project K1604

E. Schedule Profile:

Common C&D Program Schedule



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Exhibit R-3 Cost Analysis (page 1)							DATE: JUNE 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E,N/BA 5			CIC Conversion/0604518N			NTDS Improv./ Common C&D / 0604518N Project K1604						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Product Development	C/CPAF	Hughes Aircraft Co.	106.521	0.000	N/A	0.000	N/A	0.000	N/A	0.000	106.521	106.521
Primary Product Development	SS/CPFF	Hughes Aircraft Co.	17.806	0.000	N/A	0.000	N/A	0.000	N/A	0.000	17.806	48.418
Primary Product Development	SS/CPFF	Raytheon Systems Co.	5.897	5.422	10/99	2.551	10/00	0.000	N/A	0.000	13.870	25.945
Govt. Engineering & Formal Test	WR	SSC-SD	43.326	0.000	N/A	0.000	N/A	0.000	N/A	0.000	43.326	N/A
Govt. System Eng./ILS/Training/Test	WR	NSWC/PHD	2.139	0.194	10/99	0.000	10/00	0.000	N/A	0.000	2.333	N/A
Miscellaneous/Government	VAR	Various	0.677	0.249	10/99	0.511	10/00	0.000	N/A	0.000	1.437	N/A
Miscellaneous/Contractors	VAR	Various	10.345	0.300	10/99	0.000	10/00	0.000	N/A	0.000	10.645	N/A
Software Development	C/CPFF	Raytheon Systems	0.000	0.000	N/A	0.000	N/A	1.150	10/01	CONT.	CONT.	
Software Development	C/CPFF	Lockheed Martin	0.000	0.000	N/A	0.000	N/A	1.150	10/01	CONT.	CONT.	
Software Development	C/CPFF	DSR	0.000	0.000	N/A	0.000	N/A	1.150	10/01	CONT.	CONT.	
System Engineering	WR/RC	NSWC, DD	0.000	0.000	N/A	0.000	N/A	0.816	10/01	CONT.	CONT.	
Subtotal Product Development			186.711	6.165		3.062		4.266		CONT.	CONT.	
Remarks: N00024-97-C-5466 was awarded as a CPAF/CPFF contract, with CLIN 0007 for ACDS Block 1 program specific efforts was a CPFF/LOE CLIN.												
Test Facility/Simulation Upgrd./Lic	VAR	Various	13.134	0.906	N/A	0.149	N/A	0.000	N/A	0.000	14.189	N/A
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			13.134	0.906		0.149		0.000		0.000	14.189	
Remarks:												

R-1 SHOPPING LIST - Item No. 120 - 5 of 120 - 6

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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Exhibit R-3 Cost Analysis (page 2)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			CIC Conversion/ 0604518N			NTDS Improv./ Common C&D / 0604518N Project K1604						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT/OT Test, Test Spt., IV&V Efforts	VAR	Various	21.137	0.439	10/99		10/00	0.000	N/A	0.000	21.576	N/A
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			21.137	0.439		0.000		0.000		0.000	21.576	
Remarks:												
Resource Management Support	VAR	Various	0.688	0.000	10/99	0.000	10/00	0.000	N/A	0.000	0.688	3.944
Government Engineering Support	VARIOUS	VARIOUS	0.000	0.130	N/A	0.400	N/A					
Contractor Engineering Support	VARIOUS	VARIOUS	0.000	0.000	N/A	0.000	N/A	0.400	10/01	CONT.	CONT.	
Program Management Support	VARIOUS	VARIOUS	0.000	0.000	N/A	0.000	N/A	0.696	10/01	CONT.	CONT.	
Travel	PD	NAVSEA	0.000	0.000	N/A	0.000	N/A	0.030	10/01	CONT.	CONT.	
Travel	VAR	Various	0.000	0.075	10/99	0.075	10/00	0.000	N/A	0.000	0.150	3.944
Subtotal Management			0.688	0.205		0.475		1.126		CONT.	CONT.	
Remarks: N00024-95-C-5433 was not awarded specifically for ACDS Block 1, support also includes SSDS MK 1 support efforts.												
Total Cost			221.670	7.715		3.686		5.392		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 120 - 6 of 120 - 6

Exhibit R-3, Project Cost Analysis
 (Exhibit R-3, page 6 of 6)
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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE Submarine Combat System/0604524N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Total PE Cost	9.184	3.609	0.000							
AN/BSY-2/F1941	9.184	3.609	0.000							
Quantity of RDT&E Articles										

A. (U) Mission Description and Budget Item Justification: This program provides system engineering support and develops software fixes for deficiencies identified during shipyard and at sea testing of the AN/BSY-2 Submarine Combat System (SCS). It incorporates the software fixes into a scheduled block upgrade(s) to the USS Seawolf prior to the conduct of Technical Evaluation (TECHEVAL) and Operational Evaluation (OPEVAL). It also provides for TECHEVAL and OPEVAL planning, asset and equipment procurement and provides direct government engineering support for the conduct of TECHEVAL and OPEVAL. In order to resolve obsolescence and reliability issues, improve acoustic superiority, and maximize Submarine Combat System commonality, it provides funds to migrate the AN/BSY-2 Submarine Combat System into the Integrated Development Plan (IDP), by implementing Acoustics Rapid COTs Insertion (ARCI) Phases II-IV on the Seawolf Class as ARCI-(V)5. Funding also supports engineering services for integration of AN/UYQ-70 on backfit submarines.

(U) Program Accomplishments and Plans:

1. (U) FY 2000 Accomplishments:
 - (U) (\$2.394) Completed Block 3A/3B and 3B1 and continued Block 3B2 and 3C development, integration and test. Initiated ARCI-(V)5 development.
 - (U) (\$3.894) Continued TECHEVAL and OPEVAL (excluding Arctic Operations).
 - (U) (\$2.896) Continued engineering support for integration on the AN/UYQ-70 Displays in backfit submarines.
2. (U) FY 2001 Plan:
 - (U) (\$2.413) Complete TECHEVAL and OPEVAL (including Arctic Operations).
 - (U) (\$1.160) Complete Block 3B2 and 3C and continue ARCI-(V)5 development and integration.
 - (U) (\$0.036) Portion of extramural program reserved for Small Business Innovative Research assessment in accordance with 15 USC 638.

Note: FY2002 & out Funds shifted to PE 0604503N Project F0219 for display purposes due to similar developmental efforts under the ARCI APB effort.

R-1 SHOPPING LIST - Item No. 121

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001																					
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		R-1 ITEM NOMENCLATURE Submarine Combat System/0604524N																					
<p>B. (U) Program Change Summary</p> <table style="width: 100%; margin-top: 20px;"> <thead> <tr> <th></th> <th style="text-align: right;"><u>FY 2000</u></th> <th style="text-align: right;"><u>FY 2001</u></th> <th style="text-align: right;"><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">9.504</td> <td style="text-align: right;">3.642</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>(U) Appropriated Value:</td> <td style="text-align: right;">9.546</td> <td style="text-align: right;">3.642</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>(U) Adjustments to FY2000/2001 Appropriated Value/ FY2001 President's Budget:</td> <td style="text-align: right;">-0.362</td> <td style="text-align: right;">-0.033</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>(U) FY 2002 PRES Budget Submit:</td> <td style="text-align: right;">9.184</td> <td style="text-align: right;">3.609</td> <td style="text-align: right;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) Change Summary Explanation:</p> <p style="margin-top: 20px;">(U) Funding: FY00 net decrease reflects reductions for Small Business Innovative Research (-\$.139) and undistributed reductions of (-\$.223). The FY01 reduction of (-\$.033) are undistributed reductions.</p> <p style="margin-top: 20px;">(U) Schedule: Three (3) additional software block upgrades have been added as 3B1, 3B2 and 3C. The completion of Block 3B2 has been rescheduled from the last quarter of FY00 to the first quarter of FY01. The completion of TECHEVAL/OPEVAL has been rescheduled from the last quarter of FY00 to the third quarter of FY01.</p> <p style="margin-top: 20px;">(U) Technical: Due to a program replan B2-CI Phase 2 has been replaced by ARCI-(V)5. ARCI-(V)5 brings ARCI Phases II-IV to the Seawolf Class submarines. ARCI-(V)5 adds improved Towed Array (including concurrent spatial vernier threatband processing), Large Spherical Array and High Frequency Array improvements as well as replacing the aging and obsolete Enhanced Modular Signal Processors with COTS based Multi Purpose Processors. The rescheduling of Block 3B2 and the subsequent rescheduling of TECHEVAL and OPEVAL can be attributed to additional software fixes that were required for delivery in the Block 3B2 product prior to the conduct of TECHEVAL/OPEVAL.</p>					<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	(U) FY 2001 President's Budget:	9.504	3.642	0.000	(U) Appropriated Value:	9.546	3.642	0.000	(U) Adjustments to FY2000/2001 Appropriated Value/ FY2001 President's Budget:	-0.362	-0.033	0.000	(U) FY 2002 PRES Budget Submit:	9.184	3.609	0.000
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																				
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R-1 SHOPPING LIST - Item No. 121

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 2 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001								
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE Submarine Combat System/0604524N									
<p>C. (U) Other Program Funding Summary:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>OPN BLI: 214700*</td> <td style="text-align: right;">183.030</td> <td style="text-align: right;">86.140</td> <td style="text-align: right;">76.404</td> </tr> </tbody> </table> <p style="margin-left: 100px;">* The AN/BSY-2 Program shares the above OPN funding line with other PMS425 Programs</p> <p>(U) Related RDT&E,N:</p> <ul style="list-style-type: none"> (U) PE 0604561N (SSN-21 Development) (U) PE 0604558N (Virginia Class Design Development) (U) PE 0604503N (Submarine Sonar Improvements) (U) PE 0604574N (Navy Tactical Computer Resources) <p>D. (U) Acquisition Strategy: The Full Scale Development and Limited Production contract is essentially complete. The follow-on contract with Lockheed-Martin Corporation, Syracuse is a sole source Cost Plus Award Fee (CPAF) with multiple option years ending in FY 2001. A contract extension through is contemplated followed by a new sole source contract with Lockheed Martin Corporation.</p>				FY 2000	FY 2001	FY 2002	OPN BLI: 214700*	183.030	86.140	76.404
	FY 2000	FY 2001	FY 2002							
OPN BLI: 214700*	183.030	86.140	76.404							

R-1 SHOPPING LIST - Item No. 121

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 3 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

June 2001

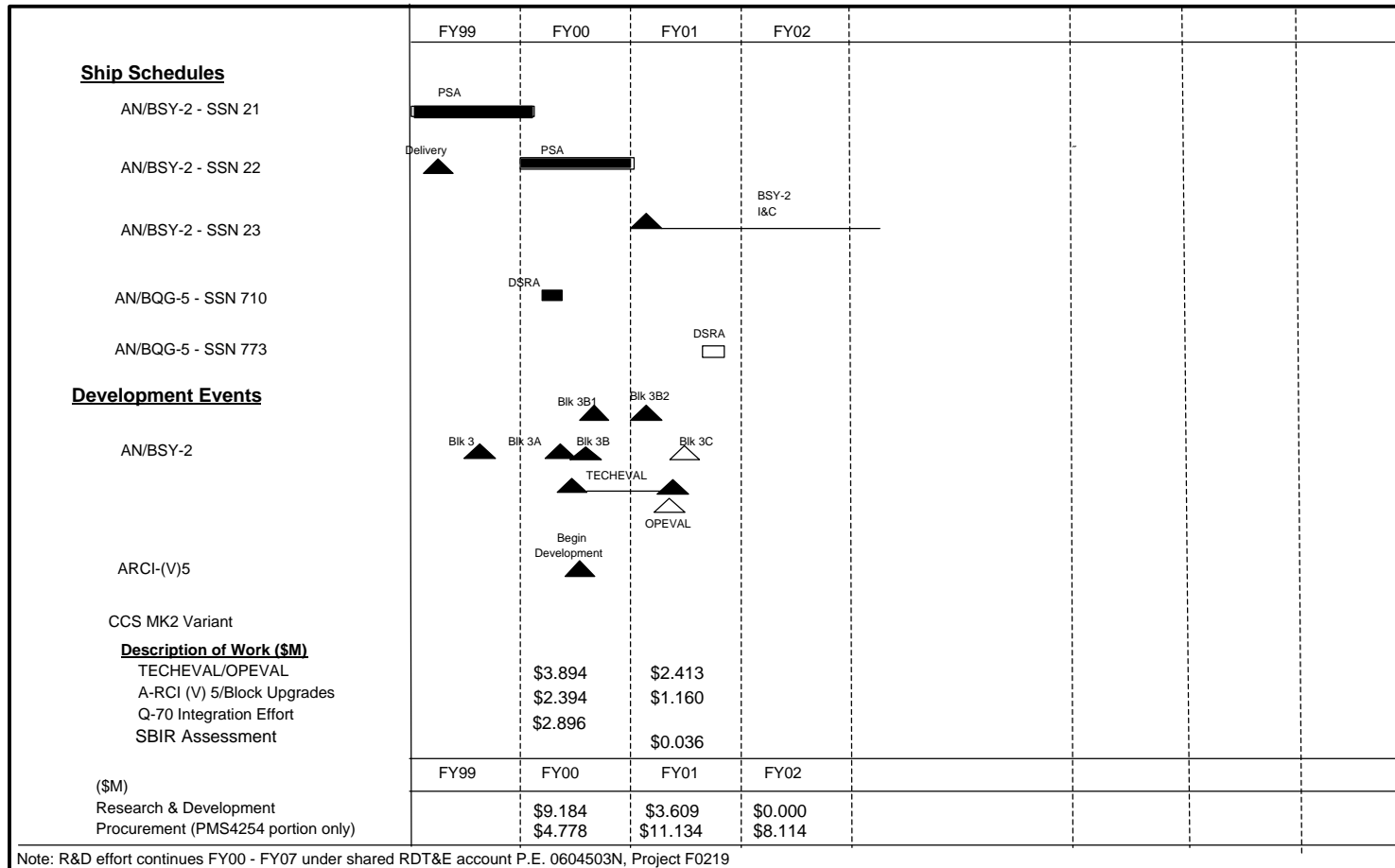
APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5

Submarine Combat System/0604524N

E. (U) Schedule Profile:



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Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 4 of 6)

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Exhibit R-3 Cost Analysis (page 1)							DATE:		June 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Submarine Combat System/0604524N			AN/BSY-2/F1941						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Primary Hardware Development	FFP	IBM Manassas, VA	16.800	0.000	N/A	0.000	N/A	0.000	N/A			
Engineering Services	FFP	DDL Omni Engineering, VA	0.000	2.896	04/00	0.000	N/A	0.000	N/A			
Systems Engineering	WR	NUWC Newport, RI	300.722	1.386	10/99	1.025	10/00	0.000	N/A			
Primary/Ancillary HW &SW Dev	CPIF	LMC Syacuse, NY	1206.800	0.000	N/A	0.000	N/A	0.000	N/A			
Team Trainer Development	CPIF	Raytheon Portsmouth, RI	22.300	0.000	N/A	0.000	N/A	0.000	N/A			
Hardware Engineering	WR	NSWC, Crane, IN	15.600	0.000	N/A	0.000	N/A	0.000	N/A			
Trainer Development Support	WR	NTSC Orlando, FL	5.300	0.000	N/A	0.000	N/A	0.000	N/A			
Software Dev. & Systems Engineering	CPAF	Lockheed Syracuse, NY	23.539	0.644	11/99	0.000	N/A	0.000	N/A			
Government Furnished Property	Various	Various	3.200	0.000	N/A	0.000	N/A	0.000	N/A			
Miscellaneous	Various	Various	34.800	0.000	N/A	0.036	N/A	0.000	N/A			
Software Dev. & Systems Engineering	CPFF	LMC, Manassas, VA	0.000	0.200	07/00	0.000	N/A	0.000	N/A			
Engineering Services	CPFF	ARL, University of Texas	0.000	0.000	N/A	0.035	N/A	0.000	N/A			
GFE Enhanced Modular Signal Proc	CPIF	AT&T Greensboro, NC	39.900	0.000	N/A	0.000	N/A	0.000	N/A			
Award Fees	CPAF	Lockheed, Syracuse, NY	2.636	0.064	6/00 & 11/00	0.000	N/A	0.000	N/A			
Subtotal Product Development			1671.597	5.190		1.096		0.000	N/A			
Remarks: Award Fee: LMC, Syracuse CPAF contract: Maximum 10% award fee budgeted. The Lockheed Martin contract does not have a target value it is a Level of Effort CPAF contract.												
	Period	Rating	Percentage Awarded			Period	Rating	Percentage Awarded				
	10/1/96 - 3/31/97	Outstanding	100%			10/1/98-3/30/99	Outstanding	100%				
	4/1/97 - 9/30/97	Outstanding	100%			4/1/99-9/30/99	Outstanding	100%				
	10/1/97 - 3/31/98	Above Average	80%			10/1/99-3/31/00	Outstanding	100%				
	4/1/98-9/30/98	Outstanding	100%			4/1/00-9/30/00	Outstanding	100%				
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Engineering Support	WR/RCP	NUWC Newport, RI	35.200	0.000		0.000		0.000				
Technical Data												
GFE												
Subtotal Support			35.200	0.000		0.000		0.000				
Remarks:												

R-1 SHOPPING LIST - Item No. 121

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001																																																																																															
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER																																																																																																	
RDT&E, N/BA-5			Submarine Combat System/0604524N			AN/BSY-2/F1941																																																																																																	
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date																																																																																														
Developmental Test & Evaluation	CPAF	LMC, Syracuse, NY	0.000	0.486	11/99	0.293	11/00	0.000	N/A																																																																																														
Operational Test & Evaluation	WR	Arctic Sub Lab	0.000	0.000	N/A	0.120	10/00	0.000	N/A																																																																																														
Dev T&E, Operational T&E	WR	NUWC Newport, RI	4.652	3.351	10/98	2.000	10/00	0.000	10/00																																																																																														
Government Furnished Property	Various	Various	0.500	0.000	N/A	0.000	N/A	0.000	N/A																																																																																														
Tooling																																																																																																							
Award Fees	CPAF	LMC, Syracuse, NY	0.000	0.047	11/99	0.000	N/A	0.000	N/A																																																																																														
Subtotal T&E			5.152	3.884		2.413		0.000																																																																																															
Remarks: Test articles required in support of TECHEVAL/OPEVAL.																																																																																																							
<table border="0"> <tr> <td colspan="3"></td> <td colspan="2">FY 00</td> <td colspan="3"></td> <td colspan="2">FY 01</td> <td colspan="3"></td> </tr> <tr> <td>Description</td> <td>Qty</td> <td>Cost</td> <td></td> <td></td> <td>Description</td> <td>Qty</td> <td>Cost</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Range Support</td> <td></td> <td>.600</td> <td></td> <td></td> <td>Range Support</td> <td></td> <td>1.000</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SSXBT/SSXSV</td> <td>75</td> <td>.023</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ADCAP</td> <td>2</td> <td>.054</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTEMs</td> <td>8</td> <td>.100</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TLAM*</td> <td>1*</td> <td>3.500*</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>																FY 00					FY 01					Description	Qty	Cost			Description	Qty	Cost						Range Support		.600			Range Support		1.000						SSXBT/SSXSV	75	.023											ADCAP	2	.054											TOTEMs	8	.100											TLAM*	1*	3.500*										
			FY 00					FY 01																																																																																															
Description	Qty	Cost			Description	Qty	Cost																																																																																																
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TLAM*	1*	3.500*																																																																																																					
* Current plan has TLAM launch cost funded by PMA281 as part of Operational Tomahawk (OTL) requirement for FY00. an is not budoeted in this Prooram Elemer																																																																																																							
Contractor Engineering Support																																																																																																							
Government Engineering Support																																																																																																							
Program Management Support																																																																																																							
Mgt Spt Service& Eng Tech Services	CPAF	EG&G Gaithersburg, MD	76.900	0.000	N/A	0.000	N/A	0.000	N/A																																																																																														
Engineering Support	MIPR	Mitre McLean, VA	7.400	0.000	N/A	0.000	N/A	0.000	N/A																																																																																														
Travel	PD	PMS4254	0.000	0.100	10/99	0.100	10/00	0.000	N/A																																																																																														
Engineering Support	WR	SUBLANT	0.000	0.010	11/99	0.000	10/00	0.000	N/A																																																																																														
Overhead																																																																																																							
Subtotal Management			84.300	0.110		0.100		0.000																																																																																															
Remarks:																																																																																																							
Total Cost			1796.249	9.184		3.609		0.000																																																																																															
Remarks:																																																																																																							

R-1 SHOPPING LIST - Item No. 121

(Exhibit R-3, page 6 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification				DATE: JUNE 2001						
APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE							
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5			VIRGINIA Class Design Development/0604558N							
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Total PE Cost	236.660	212.127	201.596							
VIRGINIA Class HM&E Development/F1947	157.410	132.629	121.178							
VIRGINIA Class Combat Systems Dev/F1950	71.506	72.562	80.418							
Enhanced Sonar Dome Demo/Validation/F2429	0.000	0.000	0.000							
Adv Sub Tactical Electronic Sys/Int. Mast/F2430	0.000	0.000	0.000							
VIRGINIA Class Advance Tech Insertion/F2644	0.000	4.954	0.000							
NON-Propulsion Electronics System/F2645	7.744	1.982	0.000							
Quantity of RDT&E Articles										

A. (U) Mission Description and Budget Item Justification: The U.S. Navy must maintain a submarine fleet that is of sufficient capability and numbers to defend American interests. The VIRGINIA Class Submarine formerly the New Attack Submarine (New SSN) is being designed to fulfill this need. It will counter the potential threats of the next century in a multi-mission capable submarine that has the ability to provide covert, sustained combat presence in denied waters. The primary goal of the program is to develop an affordable yet capable submarine by evaluating a broad range of system and technology alternatives, and pursuing cost reduction, producibility improvement, and technical risk management. This Program Element (PE) provides the technology, prototype components, and systems engineering needed to design and construct the VIRGINIA Class Submarine and build and its Command, Control, Communications, and Intelligence (C3I) System. This PE directly supports the following VIRGINIA Class Submarine missions: (1) covert strike warfare; (2) anti-submarine warfare; (3) covert intelligence collection/surveillance, indication and warning, and electronic warfare; (4) anti-surface ship warfare; (5) special warfare; (6) mine warfare; and (7) battle group support.

(U) Project F2429: Plus up continued a FY97 special congressional interest item that includes B.F. Goodrich, Electric Boat and Naval Surface Weapons Center as participants. The line funded investigation into new manufacturing processes for a submarine bow SONAR dome.

(U) Project F2430: The congressional plus-up for Advance Submarine Tactical Electronic Combat System (ASTECS) and Integrated Electronic Support (ES) Measures Mast (IEM) restored several highly desirable elements of the ASTECS/IEM programs to improve platform performance. These items were eliminated due to fiscal constraints. Improvements included enhancements to ship's radar intercept, emitter identification, and signal intercept capabilities.

R-1 SHOPPING LIST - Item No. 123

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 20)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: JUNE 2001																					
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		R-1 ITEM NOMENCLATURE VIRGINIA Class Design Development/0604558N																					
<p>(U) Project F2644: The Congressional Plus-Up provided additional funding to insert new technologies on the VIRGINIA Class Submarine. With these funds, three technology insertions were initiated for VIRGINIA Class Submarine specific development: High Frequency Remote Ahead Profiling; Total Ship Monitoring System (TSMS) Improvements; and Advanced Sail. FY01 Submarine Congressional Plus-Up is for Multi Purpose Processor (MPP) SBIR follow-on for Technology Insertion and refresh for Virginia SSN Combat System.</p> <p>(U) Project F2645: The congressional plus-up is for VIRGINIA Class Submarine Non-Propulsion Electronics System (NPES) inter-system engineering and integration efforts. FY01 Submarine Congressional Plus-Up is for Submarine Common Architecture.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 45%;"></th> <th style="width: 15%; text-align: right;">FY 2000</th> <th style="width: 15%; text-align: right;">FY 2001</th> <th style="width: 25%; text-align: right;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget:</td> <td style="text-align: right;">247.982</td> <td style="text-align: right;">207.091</td> <td style="text-align: right;">160.880</td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: right;">249.456</td> <td style="text-align: right;">214.091</td> <td></td> </tr> <tr> <td>Adjustment to: FY2000/2001 Appropriated Value/ FY2001 Presidents Budget</td> <td style="text-align: right;">-12.796</td> <td style="text-align: right;">-1.964</td> <td style="text-align: right;">40.716</td> </tr> <tr> <td>FY 2002 PRES Budget Submit:</td> <td style="text-align: right;">236.660</td> <td style="text-align: right;">212.127</td> <td style="text-align: right;">201.596</td> </tr> </tbody> </table> <p>(U) Change Summary Explanation:</p> <p>(U) F1947 Funding: The FY2000 decrease of (-\$8.933M) is attributed to an increase of (\$0.291M) for Restoration issue 62288 for Outsourcing and decreases of (-\$0.360M) for SSP (contracts), (-\$0.918M) for Undistributed Adjustments, (-\$0.648M) for Section 8055: Proportionate Reduction, (-\$0.346M) for BTR 00-43, (-\$4.674M) for Small Business Innovative Research (SBIR), (-\$1,580M) for various minor program adjustments and (-\$0.698M) for FY2000 actuals adjustment. The FY2001 decrease of (-\$1.228) is attributed to a (-\$0.937M) adjustment for Section 8086: Pro Rata Reduction and a (-\$0.291M) for Government-Wide Rescission. The FY2002 increase of (+21.059M) is attributed to increases of (\$23.101M) for program increases and (\$0.319M) for Program Support and decreases of (-\$1.678M) for various program adjustments and (-\$0.683M) for NWCF rate adjustments.</p> <p>(U) F1950 Funding: The FY2000 decrease of (-\$3.607M) is attributed to an increases of (\$0.122M) for Restoration issue 62288 for Outsourcing, (\$0.075M) for FY2000 actuals adjustment and decreases of (-\$0.151M) for SSP (contracts), (-\$0.414M) for Undistributed Adjustments, (-\$0.293M) for Section 8055: Proportionate</p>					FY 2000	FY 2001	FY 2002	FY 2001 President's Budget:	247.982	207.091	160.880	Appropriated Value:	249.456	214.091		Adjustment to: FY2000/2001 Appropriated Value/ FY2001 Presidents Budget	-12.796	-1.964	40.716	FY 2002 PRES Budget Submit:	236.660	212.127	201.596
	FY 2000	FY 2001	FY 2002																				
FY 2001 President's Budget:	247.982	207.091	160.880																				
Appropriated Value:	249.456	214.091																					
Adjustment to: FY2000/2001 Appropriated Value/ FY2001 Presidents Budget	-12.796	-1.964	40.716																				
FY 2002 PRES Budget Submit:	236.660	212.127	201.596																				

R-1 SHOPPING LIST - Item No. 123

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 2 of 20)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE VIRGINIA Class Design Development/0604558N	
<p>Reduction (-\$1.490M) for SBIR and (-\$1.456M) for BTR 00-46. The FY2001 decrease of (-\$0.672M) is attributed to a (-\$0.513) adjustment for Section 8086; Pro Rata Reduction and a (-\$0.159M) for Government-Wide Rescission. The FY2002 increase of (+19.657M) is attributed to increases of (\$20.086M) for program increases and (\$0.196M) for Program Support and decreases of (-\$0.074M) for various minor program adjustments, (-\$0.433M) for VA NPES Functionality Improvement and (-\$0.118M) for NWCF rate adjustments.</p> <p>(U) F2644 Funding: The FY2001 decrease of (-\$0.046M) is attributed to a (-\$0.035M) adjustment for Section 8086: Pro Rata Reduction and (-\$0.011M) for Government-Wide Rescission.</p> <p>(U) F2645 Funding: The FY2000 decrease of (-\$0.0256M) is attributed to an increase of (\$0.019M) for various minor program adjustments and decreases of (-\$0.044M) for Undistributed Adjustments, (-\$0.031M) for section 8055: Proportionate Reduction, and (-\$0.200M) for SBIR. The FY2001 decrease of (-\$0.018M) is attributed to a (-\$0.014M) adjustment for Section 8086: Pro Rata reduction and (-\$0.004M) for Government-Wide Recission.</p>		

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Exhibit R-2, RDT&E Budget Item Justification
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EXHIBIT R-2a, RDT&E Project Justification					DATE: JUNE 2001					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Development		PROJECT NAME AND NUMBER VIRGINIA Class HM&E Development/F1947							
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Project Cost	157.410	132.629	121.178							
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification: (U) This project encompasses all the ship system development efforts for the VIRGINIA Class Submarine. This project is essential to achieve balanced platform capability, affordability, and flexibility in a low rate production environment. The thrust of these efforts will be to develop and apply multiple, advanced system technologies which are integrated into the design of the VIRGINIA Class Submarine. New technologies are being transitioned from industry and Government research and development programs where doing so offers substantial performance and/or affordability payoffs. This project applies to completing system developments for the lead ship construction as well as transitions, technologies for insertion on future VIRGINIA Class Submarines.

(U) Program Accomplishment and Plans:

1. (U) FY 2000 Accomplishments:

(U) (\$130.013M) Continued design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), weapons stowage, and handling systems; propulsor improvement, electromagnetic signature reduction; and ship control system. Continued shock qualification testing and analyses of various components. Continued system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provided Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Supported ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Continued transitions and engineering developments for new technology insertions into the VIRGINIA Class Submarine including Accelerated Electromagnetic (EM) Silencing, Total Ship Monitoring System (TSMS) Improvements, Towed Array Handling Control System, Acoustic Comms, Conformal Acoustic Velocity Sensor (CAVES) Wide Aperture Array (WAA) and Advanced Sail Development.

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 20)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class HM&E Development/F1947
<p>(U) (\$12.861M) Continued effectiveness analyses and evaluations relating to force effectiveness. Conducted analysis in support of force effectiveness assessment and component performance tradeoffs. Maintained cost based approach to VIRGINIA Class Submarine construction through use of IPPD's concurrent engineering philosophy. Continued coordination of VIRGINIA Class Submarine specification at the shipbuilder. Continued cost estimating and validation of cost reduction ideas for VIRGINIA Class Submarine overall design development. Continued environmental compliance and pollution prevention efforts.</p> <p>(U) (\$9.647M) Continued development of: Human System Integration (HSI), Technology Refresh/COTS support concepts, Ship Configuration & Logistics Support Information System (SCLSIS) Studies, Reliability, Maintainability and Availability (RM&A) modeling analyses, Onboard Team Trainer Master Controller (OBTT MC) and trainers/training support.</p> <p>(U) (\$4.889M) Continued the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Planned and coordinated second shipbuilder Test and Evaluation efforts. Provide IPPD support to Commander Operational Test and Evaluation Force (COTF) operational assessments. Prepared test plans, schedules and support associated with developmental testing, conducted Command and Control System Off-hull Test Series, Shock, Acoustic and Launchers Trials Testing, Weapons Accuracy Testing and Technical Evaluation. Conducted engineering evaluation of test results. LFT&E modeling and analysis. Continued development of the total ship test plan in support of DT/OT-IIA-IIF.</p>		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class HM&E Development/F1947
<p>2. (U) FY 2001 Plan:</p> <p>(U) (\$103.737M) Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), weapons stowage and handling systems; propulsor improvements, electromagnetic signature reduction; and ship control system. Continue shock qualification testing and analyses of various components. Continue system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provide Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Continue transitions and engineering developments for new technology insertions into the VIRGINIA Class submarine including Accelerated Electromagnetic (EM) Silencing, Total Ship Monitoring System (TSMS) Improvements, Towed Array Handling Control System, Acoustic Comms, Sonar Processing Improvements, Improved Submarine Launched Mobile Mine (ISLMM) Ship Integration, Conformal Acoustic Velocity Sensor (CAVES) Wide Aperature Array (WAA), and Advanced Sail Development.</p> <p>(U) (\$13.225M) Continue effectiveness analyses and evaluations relating to force effectiveness. Conduct analysis in support of force effectiveness assessment and component performance tradeoffs. Maintain cost based approach to VIRGINIA Class submarine construction through use of IPPD's concurrent engineering philosophy. Continue coordination of VIRGINIA Class submarine specification at the shipbuilder. Continue cost estimating and validation of cost reduction ideas for VIRGINIA Class submarine overall design development. Continue environmental compliance and pollution prevention efforts.</p> <p>(U) (\$5.173M) Continue development of: COTS support concepts and unique logistics development. Trainers/training to support the VIRGINIA Class funded under this line include: VIRGINIA Ship Contro; Operator Trainer (VSCOT), OBTT MC, Submarine Multi-Mission Team Trainer(SMMTT) and Ship Contro; Maintenance Trainer.</p> <p>(U) (\$10.494M) Continue the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Plan and coordinate second shipbuilder Test and Evaluation efforts. Provide IPPD support to Commander Operational Test and Evaluation Force (COTF) operational assessments. Prepare test plans, schedules and support associated with developmental testing, conduct Command and Control System Off-hull Test Series, Shock, Acoustic and Launchers Trials Testing, Weapons Accuracy Testing and Technical Evaluation. Conduct engineering evaluation of test results. LFT&E modeling and analysis. Continue development of the total ship test plan in support of DT/OT-IIA-IIF.</p>		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class HM&E Development/F1947
<p>3. (U) FY 2002 Plan:</p> <p>(U) (\$89.335M) Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), main propulsion unit improvements, weapons stowage and handling systems; propulsor improvements, electromagnetic signature reduction; and ship control system. Continue shock qualification testing and analyses of various components. Continue system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provide Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Continue transitions and engineering developments for new technology insertions into the VIRGINIA Class submarine including Accelerated Electromagnetic (EM) Silencing, Towed Array Handling Control System, Acoustic Comms, and Sonar Processing Improvements, Passive Ranging, Improved Submarine Launched Mobile Mine (ISLMM) Ship Integration, Conformal Acoustic Velocity Sensor (CAVES) Wide Aperature Array (WAA), and Advanced Sail Development.</p> <p>(U) (\$15.292M) Continue effectiveness analyses and evaluations relating to force effectiveness. Conduct analysis in support of force effectiveness assessment and component performance tradeoffs. Maintain cost based approach to VIRGINIA Class submarine construction through use of IPPD's concurrent engineering philosophy. Continue coordination of VIRGINIA Class submarine specification at the shipbuilder. Continue cost estimating and validation of cost reduction ideas for VIRGINIA Class submarine overall design development. Continue environmental compliance and pollution prevention efforts.</p> <p>(U) (\$6.189M) Continue development of: Trainers/training to support the VIRGINIA Class funded under this line include: VSCOT, OBTT MC, Common Basic Operator Trainer, SMMTT, Ship Control Maintenance Trainer , and Non-Tactical Data Processing System (NTDPS)</p> <p>(U) (\$10.362M) Continue the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Plan and coordinate second shipbuilder Test and Evaluation efforts. Provide IPPD support to Commander Operational Test and Evaluation Force (COTF) operational test OT-IIB at the COATS facility. Prepare test plans, schedules and support associated with developmental testing, conduct Command and Control System Off-hull Test Series, Shock, Acoustic and Launchers Trials Testing, Weapons Accuracy Testing and Technical Evaluation. Conduct engineering evaluation</p>		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class HM&E Development/F1947

of test results. LFT&E modeling and analysis. Continue development of the total ship test plan in support of DT/OT-IIA-IIF.

B. (U) Other Program Funding Summary: (Dollars in Millions)

	FY 2000	FY 2001	FY 2002
SCN Line 201300 PE: 0204281N	744.475	1700.769	2093.202
SCN Line 201310 PE: 0204281N	0.000	0.000	0.000
O&M,N BA-2 1B2B PE: 0204283N	0.000	0.000	0.000
OPN BA-8 Line Item 094200	0.000	0.000	0.000

(U) Related RDT&E:

(U) PE 0603561N (Advanced Submarine System Development)

(U) PE 0603570N (Advanced Nuclear Power Systems)

(U) PE 0602121N (Surface Ship Technology)

C. (U) Acquisition Strategy: The VIRGINIA Class Submarine Program has implemented Integrated Product and Process Development (IPPD). The VIRGINIA Class Submarine Program Office has collocated the engineering and program management personnel necessary to plan and pursue total ship system design management and life cycle acquisition responsibilities. The traditional distinct phasing of the design process has been replaced with the continuous concurrent engineering IPPD process. The IPPD approach will also facilitate a smoother transition from design to manufacturing, and reduce the number of changes typically encountered during construction of the Lead and early follow ships. In September 1997, Congress passed a law allowing the two companies to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, Electric Boat remained the design yard for the VIRGINIA Class Submarine and Newport News Shipyard became a part of the IPPD process.

D. (U) Schedule Profile: See attached.

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification

DATE:

JUNE 2001

[illegible]

PROGRAM ELEMENT NAME AND NUMBER

R	PROJECT NAME AND NUMBER
---	-------------------------

RDT&E, N/BA-5

VIRGINIA Class Design Dev/0604558N

VIRGINIA Class HM&E Development/F1947



R-1 SHOPPING LIST - Item M23

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, Page 9 of 20)

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			VIRGINIA Class Design Dev/0604558N			VIRGINIA Class HM&E Development/F1947						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Primary Hardware Development												
Ancillary Hardware Development												
Component Development	SS/CPFF	EB-2103 Groton, CT	329.087	48.349	Various	25.502	Various	36.913	Various			
Main Propulsion Complex Dev	SS/CPFF	EB-4030 Groton, CT	182.556	29.800	Various	15.700	Various	21.000	Various			
Component Development	WR	NSWC Carderock, MD	282.088	34.162	11/99	27.058	11/00	34.727	11/01			
Component Development	WR	NAWC Orlando, FL	10.344	6.062	11/99	3.954	11/00	3.217	11/01			
Component Development	WR	NUWC Newport, RI	59.807	5.799	11/99	7.620	11/00	3.497	11/01			
Technology Insertion	Various	Miscellaneous	9.400	5.551	Various	14.748	Various	2.792	Various			
Component Development	Various	Miscellaneous	178.705	15.924	Various	22.918	Various	3.409	Various			
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1051.987	145.647		117.500		105.555				
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000				
Remarks: Not Applicable.												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 10 of 20)

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Exhibit R-3 Cost Analysis (page 2)							DATE: JUNE 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			VIRGINIA Class Design Dev/0604558N			VIRGINIA Class HM&E Development/F1947						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Developmental Test & Evaluation												
Operational Test & Evaluation												
Test & Evaluation	WR	NSWC Carderock, MD	1.977	1.516	11/99	2.903	11/00	4.526	11/01			
Test & Evaluation	WR	NUWC, Newport, RI	5.184	1.607	11/99	2.476	11/00	2.665	11/01			
Test & Evaluation	C/CPAF	EG&G-C6411 Rockville, MD	2.224	1.190	Various	1.227	Various	1.273	Various			
Test & Evaluation	Various	Miscellaneous	6.174	0.576	Various	1.388	Various	1.898	Various			
Tooling												
GFE												
Subtotal T&E			15.559	4.889		7.994		10.362				
Remarks:												
Contractor Engineering Support												
Contractor Support Services	C/CPAF	EG&G-C6411 Rockville, MD	10.321	5.360	Various	5.608	Various	0.000	Various			
Contractor Spt Services/Award Fees	C/CPAF	EG&G-C6411 Rockville, MD	1.032	0.000	Various	0.000	Various	0.000	Various			
Contractor Support Services	Various	Miscellaneous	17.718	1.514	Various	1.527	Various	5.261	Various			
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			29.071	6.874		7.135		5.261				
Remarks:												
Total Cost			1096.617	157.410		132.629		121.178				
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 11 of 20)

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EXHIBIT R-2a, RDT&E Project Justification						DATE:		JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604		PROJECT NAME AND NUMBER VIRGINIA Class Combat System Development/F1950							
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002							
Project Cost		71.506	72.562	80.418							
RDT&E Articles Qty											
<p>A. (U) Mission Description and Budget Item Justification: (U) This project encompasses the top level systems development, tested integration into the ship of the VIRGINIA Class Submarine C3I System (formerly referred to as Combat Systems), which includes multiple subsystems. The scope of the system is expanded from Sonar and Combat Control subsystems to include AN/BLQ-10 Electronic Support (ES) Measures, Exterior Communications, Submarine Regional Warfare System, Navigation, Total Ship Monitoring, Imaging, Tactical Acoustic Communications, Radar, Interior Communications, Tactical Support Devices, Fiber Optic Cable Subsystem, and Special Purpose Subsystems, such as Battle Force Team Trainer and others. VIRGINIA Class Submarine specific development efforts including requirements definition, software, hardware development, software/hardware test, prototype production, and electronic integration as well as physical integration into the platform.</p> <p>(U) VIRGINIA Class Submarine implementation approach is based on Open System, Commercial-off-the –Shelf (COTS) Non-Developmental Items or subsystems. The program leverages on-going subsystems developments or developing new subsystems where needed to satisfy VIRGINIA Class requirements. The recurring cost of VIRGINIA Class Submarine C3I Systems is being reduced to meet the program's affordability goals. Modifications to many subsystems must be developed to: (1) reduce the shipbuilding and construction recurring costs through the use of COTS components; (2) use proven computer technologies to evolve to an Open System design; (3) enhance capabilities to support expanded operational requirements, reduced manning, and reduced shipboard component footprint.</p> <p>(U) To meet the collective future threat, the submarine force must operate as effectively in littoral regions as it traditionally has in open ocean. Close coordination with surface battle groups and airborne units is essential to mission accomplishment. To meet the VIRGINIA Class Submarine mission, the following capabilities are provided by the VIRGINIA Class Submarine C3I System: (1) Passive and Active detection of multiple contacts, including early warning threat determination through processing and analysis of sensor data; (2) classification of sensor data for the purpose of identifying contacts; (3) localization (tracking) of contacts through target motion analysis; (4) preset, launch, and control of weapons and countermeasures; (5) improved communication and connectivity with other battle group elements, airborne units, and special operations forces; (6) incorporation of vertical launch system to enhance strike warfare; and (7) more effective covert surveillance through video imaging with onboard digital enhancement capabilities, and improved electronic warfare analysis capabilities.</p>											

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class Combat System Development/F1950
<p>(U) Accomplishments and Plans:</p> <p>1. (U) FY 2000 Accomplishments:</p> <ul style="list-style-type: none">- (U) (\$20.426M) System level development activities continued in the following areas: SIE electronic integration; development and validation of C3I System test and evaluation procedures to support integration testing and installation/test into the platform; and conducted system engineering functions such as requirements management, interface control, test and evaluation planning to support formal DT/OT; C3I Subsystem platform integration and external interface integration planning. Completed delivery of Pre-Cable Kits and Installation support hardware, COATS installation and test planning, conducted Environmental Qualification Testing. Began development of PSA deliveries of technology refreshment changes to C3I System/subsystems.- (U) (\$51.080M) Completed Combat Control, Sonar and Architecture (S/CC/A) subsystem preliminary product baseline development; completed initial phase of subsystem System Design Certification testing (SDCT 1). Completed Architecture subsystem Functional Certification Testing. Continued inter-subsystem integration in preparation for November 2000 delivery of the NSSN preliminary product baseline subsystem. Began detailed S/CC/A engineering support to shipyard intra- and inter-subsystem integration. Began development of PSA deliveries of technology refreshment changes to S/CC/A subsystems. <p>2. (U) FY 2001 Plan:</p> <ul style="list-style-type: none">- (U) (\$21.846M) System level development activities continue in the following areas: development and validation of C3I System test and evaluation procedures to support integration testing and installation/test into the platform; conduct system engineering functions such as requirements management, interface control, test and evaluation planning to support formal DT/OT; and begin C3I System Integration and Interface Operability Testing. Begin development of system changes identified by integration efforts. Continue development of PSA deliveries of technology refreshment changes to C3I System/subsystems.		

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Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY		JUNE 2001
RDTE&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class Combat System Development/F1950
<p>- (U) (\$ 49.201M) Continue detailed S/CC/A engineering support to shipyard intra- and inter-subsystem integration. Conduct operability and integration testing. Continue development of PSA deliveries for technology refreshment changes to S/CC/A subsystems. Begin integration of tactical tomahawk capability into S/CC/A.</p> <p>- (U) (\$1.515M) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p> <p>3. (U) FY 2002 Plan:</p> <p>- (U) (\$45.076M) Complete initial system level development activities continue in the following areas: development and validation of C3I System test and evaluation procedures to support integration testing and installation/test into the platform; conduct system engineering functions such as requirements management, interface control, test and evaluation planning to support formal DT/OT; and complete C3I System Integration and Interface Operability Testing with conduct of OT-IIB. Continue development of system changes identified during integration efforts. Continue development of PSA deliveries of technology refreshment changes to C3I System/subsystems.</p> <p>- (U) (\$35.342M) Complete detailed S/CC/A engineering support to shipyard intra- and inter-subsystem integration. Continue development of S/CC/A subsystem changes identified during integration efforts. Continue development of PSA deliveries for technology refreshment changes to S/CC/A subsystems. Continue integration of tactical tomahawk capability into S/CC/A.</p>		

R-1 SHOPPING LIST - Item No. 123

Exhibit R-2a, RDT&E Project Justification
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	JUNE 2001
APPROPRIATION/BUDGET ACTIVITY		PROJECT NAME AND NUMBER	
RDT&E, N/BA-5		VIRGINIA Class Combat System Development/F1950	
 B. (U) Other Program Funding Summary: (Dollars in Millions)			
	FY 2000	FY 2001	FY 2002
SCN Line 201300 PE: 0204281N	744.475	1700.769	2093.202
SCN Line 201310 PE: 0204281N	0.000	0.000	0.000
O&M,N BA-2 1B2B PE: 0204283N	0.000	0.000	0.000
OPN BA-8Line Item 094200	0.000	0.000	0.000
 (U) Related RDT&E:			
(U) PE 0603504N (Advanced Submarine Combat Systems Development)			
(U) PE 0603561N (Advanced Submarine System Development)			
(U) PE 0603562N (Submarine Tactical Warfare Systems)			
(U) PE 0603570N (Advanced Nuclear Power Systems)			
(U) PE 0604503N (Submarine System Equipment Development)			
(U) PE 0604574N (Navy Tactical Computer Resources)			
(U) PE 0604777N (Navigation/ID Systems)			
(U) PE 0101226N (Submarine Acoustic Warfare Development)			
(U) PE 0604562N (Submarine Tactical Warfare System)			
(U) PE 0604524N (Submarine Combat System)			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER VIRGINIA Class Design Dev/0604558N	PROJECT NAME AND NUMBER VIRGINIA Class Combat System Development/F1950
<p>C. (U) Acquisition Strategy: The VIRGINIA Class Submarine Program has implemented Integrated Product and Process Development (IPPD). The VIRGINIA Class Submarine Program Office has collocated the engineering and program management personnel necessary to plan and pursue total ship system design management and life cycle acquisition responsibilities. The traditional distinct phasing of the design process has been replaced with the continuous concurrent engineering IPPD process. The IPPD approach will also facilitate a smoother transition from design to manufacturing, and reduce the number of changes typically encountered during construction of the lead and early follow ships. In September 1997, Congress passed a law allowing the two companies to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, Electric Boat remained the design yard for the VIRGINIA Class Submarine and Newport News Shipyard became a part of the IPPD process.</p> <p>D (U) Schedule Profile: See attached.</p>		

R-1 SHOPPING LIST - Item No. 123

Exhibit R-2a, RDT&E Project Justification
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EXHIBIT R-2a, RDT&E Project Justification

DATE:

JUNE 2001

APPROPRIATION/BUDGET ACTIVITY

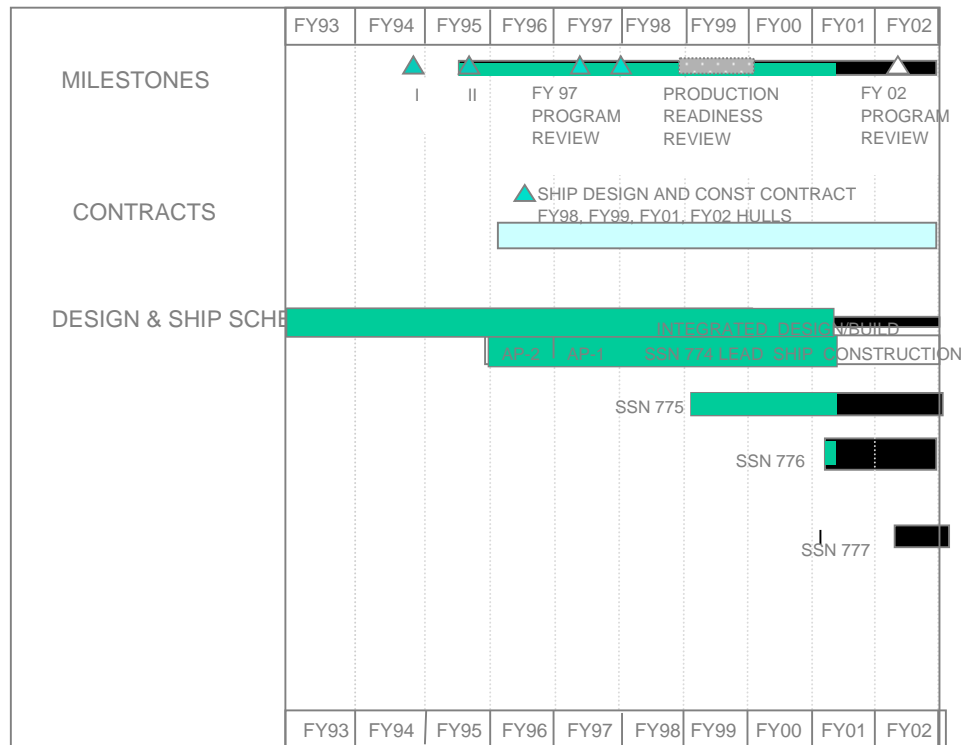
PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N/BA-5

VIRGINIA Class Design Dev/0604558N

VIRGINIA Class Combat Systems Development /F1950



R-1 SHOPPING LIST - Item N23

Exhibit R-2a, RDT&E Project Justification
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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)							DATE: JUNE 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			VIRGINIA Class Design Dev/0604558N			VIRGINIA Class Combat System Development/F1950						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
C3I Prime Contract E&MD Total	C/CPAF	Lockheed Manassas, VA	151.202	43.296	Various	15.899	Various	6.799	Various			
C3I Prime Contract E&MD Award Fee	C/CPAF	Lockheed Manassas, VA	4.608	0.000		4.396	Various	1.400	Various			
C3I Prime Contract Post Delivery	C/FFP	Lockheed Manassas, VA		1.000	Various	9.035	Various	8.619	Various			
Advanced Display Sys (AN/UYQ-70)	SS/CPFF											
	CPIF	Lockheed St. Paul, MN	19.522	0.916	Various	1.840	11/00	2.000	12/00			
Multi-Purpose Processor	SS/CPIF	Digital Sys Fairfax, VA	41.449									
Multi-Purpose Processor	SS/CPIF	Lockheed Manassas, VA	1.755									
Photonics	C/CPIF	Kollmorgen Northhampton, MA	22.842	0.833	Various	0.185	11/00	0.194	12/00			
Non-Penetrating Periscope	C/CPIF	Kollmorgen Northhampton, MA	4.060									
Electronic Support Measures	C/FFP	Lockheed Syracuse, NY	37.475			0.195		0.203				
Platform Integration	SS/CPFF	EB Corp Groton, CT	18.414	1.656	Various	2.060	11/00	5.820	12/00			
Platform Integration	SS/CPFF	NNews Shipbuilding NNews, VA	2.725									
Integrated Electronic Mast	SS/CPIF	Goleta Portsmouth, RI	8.897									
Tactical Simulator	SS/CPFF	Goleta Portsmouth, RI	2.750									
High Frequency Sail Array	SS/CPFF	Applied Research Austin, TX	3.273									
Navigation/Radar	SS/CPFF	Sperry Corp Charlottesville, VA	6.153	0.071	Various	0.115	01/00	0.125	01/01			
Technology Refreshment	Various	TBD				9.389	Various	7.911	Various			
Open System Module	SS/CPFF	UNISYS Corp St. Paul, MN	2.500									
Technical Direction Agent	N/A	NUWC Newport, RI	139.290	14.964	Various	13.799	Various	12.280	Various			

R-1 SHOPPING LIST - Item No. 123

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 18 of 20)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			VIRGINIA Class Design Dev/0604558N			VIRGINIA Class Combat System Development/F1950						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Systems Engineering	N/A	NSWC Cardock, MD	2.936	0.419	Various	0.400	11/00	0.345	11/00			
Systems Engineering	N/A	NSWC Crane, IN	2.685	0.100	Various	0.100	11/00	0.205	11/00			
Systems Engineering	N/A	SSC Charleston, SC	2.333									
Systems Engineering	N/A	SSC San Diego, CA	1.535									
Systems Engineering	N/A	NUWC Keyport, WA	1.941	0.458	Various	0.430	11/00	1.085	01/00			
Miscellaneous	Various	Various	21.348	1.303	Various	8.194	Various	28.982	Various			
Subtotal Product Development			499.693	65.016		66.037		75.968				
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000				
Remarks: Not Applicable.												

R-1 SHOPPING LIST - Item No. 123

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 19 of 20)

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Exhibit R-3 Cost Analysis (page 2)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			VIRGINIA Class Design Dev/0604558N			VIRGINIA Class Combat System Development/F1950						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Developmental Test & Evaluation												
Operational Test & Evaluation												
Test & Evaluation	Various	Various	0.000	0.000		0.230	Various	0.490	Various			
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.230		0.490				
Remarks:												
Contractor Engineering Support												
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, VA	8.413	2.912	Various	4.123	Various					
CSS/ETS Award Fee	C/CPFF	EG&G Rockville, VA	0.673	0.233	Various	0.330	Various					
Contractor Support Services/ETS	C/CPFF	EG&G Rockville, VA	8.857									
Contractor Support Services/ETS	C/CPFF	SWL Inc. Vienna, VA	5.705									
Contractor Support Services/ETS	C/CPFF	American Sys Chantilly, VA	2.099									
Miscellaneous	Various	Various	3.912	3.345	Various	1.842	Various	3.960	Various			
Program Management Support												
Travel												
Subtotal Management			29.659	6.490		6.295		3.960				
Remarks:												
Total Cost			529.352	71.506		72.562		80.418				
Remarks:												

R-1 SHOPPING LIST - Item No. 123

Exhibit R-3, Project Cost Analysis
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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002							
Total PE Cost	30.505	6.557	5.770							
SSN-21 Development/F1946	30.505	6.557	5.770							
Quantity of RDT&E Articles										

A. (U) Mission Description and Budget Item Justification: The SEAWOLF submarine is a multi-mission ship that will introduce unprecedented performance capabilities. It is the quietest, most heavily-armed attack submarine the Navy has ever built. The design of the SEAWOLF is based on an extensive research and development program and incorporates technological advancements to provide: order of magnitude improvement in ship quieting; improved acoustic sensors; more capable combat systems; greater weapon capacity and capability; quieter launch; weapon launch at high ship speed; advanced reactor; improved performance machinery program; an advanced propulsor; increased operating depth; improved ship control; and enhanced survivability.

(U) Program Accomplishments and Plans:

1. (U) FY 2000 Accomplishments :

- (U) (\$21.913) Commenced Operational Evaluation (OPEVAL)/Technical Evaluation (TECHEVAL).
- (U) (\$4.000) Funded Live Fire Test and Evaluation requirements without performing Full Ship Shock Test (FSST) and removed temporary instrumentation to restore the SSN21 to its baseline condition.
- (U) (\$4.592) Re-engineered and corrected deficiencies in Non-Propulsion Electronics (NPE) systems including Ship Control, Exterior Communications Systems (ECS), Total Ship Monitoring System, etc. Re-engineered and designed to correct acoustic deficiencies including propulsor, TT Muzzle Door Slide Mechanism, investigation of TT Shutter Windup, investigation of Motor Bearing Greasing, and Sail Instrumentation Data Analysis. Continued risk management efforts in all high risk areas.

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Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	SSN-21 Development/0604561N	
<p>2. (U) FY 2001 Plan:</p> <ul style="list-style-type: none">- (U) (\$2.264) Complete Operational Evaluation (OPEVAL)/Technical Evaluation (TECHEVAL).- (U) (\$1.219) Funds Component Shock Tests and Analysis (WAA/Aft, Ventilator Hanger, Periscope, and A/B-1/PMP) .- (U) (\$2.985) Re-engineering and correction of deficiencies in NPE systems including Ship Control, Weapons Shipping and Handling Systems (WSHS), Exterior Communication System (ECS), etc. Re-engineering and design to correct acoustic deficiencies including Depth Control Pressure/Vent, Hydraulics, Auxiliary Systems, etc. Continue risk management efforts in all high risk areas.- (U) (\$.089) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>3. (U) FY 2002 Plan</p> <ul style="list-style-type: none">- (U) (\$1.200) Complete analysis and reporting requirements from Operational Evaluation (OPEVAL)/Technical Evaluation (TECHEVAL).- (U) (\$2.950) Funds Component Shock Test and Analysis (Periscope, Propulsor, and Spherical Air Flask).- (U) (\$1.620) Re-engineering and correction of deficiencies in NPE systems including Ship Control, Weapons Shipping and Handling Systems (WSHS), Exterior Communication System (ECS), etc. Re-engineering and design to correct acoustic deficiencies including Main Feed Pump Vane, R-12, Auxiliary Systems, Ship Service Hydraulic Pumps, etc. Continue risk management efforts in all high risk areas.		

R-1 SHOPPING LIST - Item No. 124

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 2 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N	

B. (U) Program Change Summary:

	FY 2000	FY 2001	FY 2002
(U) FY 2001 President's Budget:	31.825	6.617	5.994
(U) Appropriated Value:	31.825	6.617	0.000
(U) Adjustment to FY 2000/2001 Appropriated Value	-1.320	-0.060	-0.224
FY2001 President's Budget			
(U) FY 2002 PRES Budget Submit:	30.505	6.557	5.770

(U) Change Summary Explanation

(U) Funding: The FY00 net decrease is a result of the SBIR Assessment in accordance with 15 USC 638 (-\$.492), a Proportionate Reduction directed by Congressional Language in the FY-01 Appropriation Bill (-\$.125M), the FY2000 Mid Year Review Adjustment (-\$.623), and FY2000 Actuals (-\$.080). The FY01 decrease is a result of a .7% Pro-Rata Reduction (across the board) (-\$.046) and a Government-wide Rescission of .22% (-\$.014). The FY-02 decrease (-\$.224) is a result of various minor undistributed adjustments.

(U) Schedule: No Schedule change.

(U) Technical: No change.

C. (U) Other Program Funding Summary:

	FY 2000	FY 2001	FY 2002
(U) SCN #201200	16.691	0.000	10.254
(U) MILCON P-398		0.000	0.000

R-1 SHOPPING LIST - Item No. 124

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 3 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N
(U) OPN #51000, #094100	FY 2000 48.403	FY 2001 11.991
		FY 2002 8.050
(U) Related RDT&E: (U) PE 0603570N (Advanced Nuclear Power Systems) (U) PE 0604524N (Submarine Combat Systems) (U) PE 0604567N (Ship Contract Design/Live Fire T&E)		
D. (U) Acquisition Strategy: (U) To deliver three SEAWOLF submarines under cost cap (U) To continue to correct SEAWOLF Acoustics deficiencies. (U) To increase commonality with Virginia Class Submarines. (U) Continue to review all areas for possible cost reductions.		
E. (U) Schedule Profile: (U) See attached Planning Schedule Program		

R-1 SHOPPING LIST - Item No. 124

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 4 of 6)

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN-21 Development/0604561N			SSN-21 Development/F1946						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	SS/CPFF	General Dynam Groton, CT	366.391	2.158	Various	0.125	Various	0.772				
Systems Engineering	SS/CPFF	NNS Newport News, VA	116.689	0.990	Various	0.125	Various	0.535				
Systems Engineering	WR/RC	NSWC Carderock, MD	314.029	1.259	Various	1.216	Various	1.250				
Systems Engineering	WR	NUWC Newport, RI	46.583	1.212	Various	0.843	Various	0.750				
Systems Engineering	Various	Various	466.845	0.114	Various	0.136	Various	0.232				
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1310.537	5.733		2.445		3.539				
Remarks:												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000				
Remarks:												

R-1 SHOPPING LIST - Item No. 124

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			SSN-21 Development/0604561N			SSN-21 Development/F1946						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Developmental Test & Evaluation	SS/CPFF	General Dynam Groton, CT	68.716	0.278		0.000		0.000				
Developmental Test & Evaluation	WR	NSWC Carderock, MD	84.804	10.546	Various	0.450	Various	0.250	Various			
Developmental Test & Evaluation	Various	Various	111.004	11.089	Various	1.814	Various	0.950	Various			
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			264.524	21.913		2.264		1.200				
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support & ETS	Various	Various	43.969	2.859	Various	1.848	Various	1.031				
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			43.969	2.859		1.848		1.031				
Remarks:												
Total Cost			1619.030	30.505		6.557		5.770				
Remarks:												

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Exhibit R-3, Project Cost Analysis
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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification					DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5				Submarine Tactical Warfare Systems / 0604562N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002						
Total PE Cost	12.556	26.249	29.246						
SSN CCS (IMP) (ENG)	12.556	26.249	29.246						
Quantity of RDT&E Articles									
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program develops software upgrades to integrate improved weapons capabilities within submarine Combat Control System (CCS) MK1, MK2, and AN/BSY-1 (Combat Control) and, as a part of Obsolete Equipment Replacement (OER), the program develops improvements to hardware which has become increasingly difficult and not economical to maintain. The thrust of the CCS Improvement program is the fleet introduction of CCS MK2 Program D0 and the development of CCS MK2 Program D0 Blocks 1 and 2. CCS MK2 converged multiple submarine combat system developments into a single effort to minimize submarine life cycle costs, across SSN 688, SSN 688I and SSBN 726 Classes. CCS MK2 Program D0 provides a modular software architecture, introduces Tomahawk Block 3 and Harpoon Block 1C capabilities, introduces Advanced Capability (ADCAP) on TRIDENT, and replaces additional obsolete equipment. CCS MK2 Program D0 Block 1 integrates CCS MK2 into AN/BSY-1 systems, replaces additional obsolete equipment, incorporates a direct interface to the Global Positioning System, incorporates Global Command Control System-Maritime (GCCS-M) (formerly known as Joint Maritime Command Information System (JMCIS)) into CCS MK2, and implements Advanced Tomahawk Weapon Control System (ATWCS), ADCAP torpedo improvements and several other miscellaneous enhancements. CCS MK2 Program D0 Block 2 incorporates into submarine CCS anticipated upgrades to ADCAP, and Tomahawk and implements additional OER. AN/BSG-1 (formerly known as Tomahawk Land Attack Missile – Nuclear (TLAM-N) Portable Launching System (PLS)) provides SSN submarines with a stand-alone TLAM-N missile launching capability.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> (U) (\$7.501) Conducted Operational Test (OT) for CCS MK2 Program D0 Block 1C. (U) (\$0.263) Commenced development of ISLMM launcher capability. (U) (\$2.156) Developed engineering change to CCS MK 2 Program D0 Block 1C to incorporate ADCAP torpedo CBASS and Tactical Tomahawk capabilities, and upgrade for commonality with VIRGINIA Class. (U) (\$2.636) Continued development of AN/BSG-1. 									

R-1 SHOPPING LIST - Item No. 125

Exhibit R-2, RDT&E Budget Item Justification

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	June 2001
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		Submarine Tactical Warfare System / 0604562N	
<p>2. (U) FY 2001 PLAN:</p> <p>(U) (\$10.245) Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate ADCAP torpedo CBASS and Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class.</p> <p>(U) (\$3.841) Complete post-OPEVAL development effort to CCS MK2 Block 1C.</p> <p>(U) (\$5.800) Continue development of AN/BSG-1 and conduct developmental and operational testing.</p> <p>(U) (\$6.000) Integration of Advanced Tactical Software, Commercial Off-the-Shelf Technology and Government Off-the-Shelf Technology Products into Backfit Submarine Combat Control Programs.</p> <p>(U) (\$0.363M) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p> <p>3. (U) FY 2002 PLAN:</p> <p>(U) (\$19.269) Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate ADCAP torpedo CBASS and Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class.</p> <p>(U) (\$9.101) Develop changes to combat control weapons simulation and equipment to enhance TOMAHAWK system reliability.</p> <p>(U) (\$0.876) Complete development of AN/BSG-1 and mission distribution system upgrades.</p>			

R-1 SHOPPING LIST - Item No. 125

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification				DATE:
				June 2001
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE		
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		Submarine Tactical Warfare System / 0604562N		
B. (U) PROGRAM CHANGE SUMMARY:				
		FY 2000	FY 2001	FY 2002
FY 2001 President's Budget:		13.353	20.492	29.210
Appropriated Value:		13.353	20,492	
Adjustment to FY2000/2001 Appropriated Value/				
FY 2001 President's Budget:		-0.797	5.757	0.036
FY 2002 PRES Budget Submit:		12.556	26.249	29.246
(U) CHANGE SUMMARY EXPLANATION:				
(U) Funding: FY00 decrease of (\$-0.797M) is attributed to decreases of (-\$0.033M) for FY0 Actuals,, (\$-0.204M) for Small Business Innovative Research (SBIR) , (\$-0.441M) for minor program adjustments., (-\$0,052M) for Section 8055: Proportionate Reduction, (-\$0.074M) for Across thr Board Reduction and an increase of (\$0.007M) to Restore Issue 62288 Outsourcing. FY 01 increase of (\$5,757M) is attributed to a Congressional add (\$6.0M) for Integration of Advance Tactical software, a decrease of (-\$0.185M) for Section 8086: .7% Pto-rata Reduction and (-\$0.058M) for Government Wide Rescission. FY02 increase of (\$0.036M) is attributed to a n increase of (\$0.052M) for vaious minor program adjustments and a decrease for (-\$0.016M) for Issue 62288 Outsourcing				
(U) Schedule: Not applicable				
(U) Technical: Not applicable.				
		FY 2000	FY 2001	FY 2002
OPN/BA-4 54200		35,353	19,416	40,716

R-1 SHOPPING LIST - Item No. 125

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 3 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	Submarine Tactical Warfare System / 0604562N	
<p>(U) Related RDT&E:</p> <ul style="list-style-type: none">(U) PE 0204229N (Tomahawk & Tomahawk Missile Planning Center)(U) PE 0205632N (MK 48 ADCAP)(U) PE 0603504N (Advanced Submarine Combat Systems Dev.)(U) PE 0604503N (Submarine System Equipment Dev.)(U) PE 0604707N (Submarine Electronic Warfare Architecture/Eng. Support) <p>D. (U) ACQUISITION STRATEGY:</p> <p>CCS MK2 Block 1C:</p> <ul style="list-style-type: none">- CCS MK2 Block 1C utilizes an open architecture in support of new and upgraded Government and Commercial Off-The-Shelf products and insertion of new weapons capabilities.- Acquisition Decision Memorandum approved 21 June 1996 granted approval to enter Engineering Manufacturing Development.- Sole Source Cost Plus Incentive Fee Contract awarded to Raytheon.- Program Review with Milestone Decision Authority conducted 20 March 1998 demonstrated hardware design maturity. Approval was received to exercise CCS MK2 Block 1C Hardware Production Option for FY98/99/00.		

R-1 SHOPPING LIST - Item No. 125

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 4 of 6)

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R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NAME AND NUMBER					
RDT&E, N/BA-5				Submarine Tactical Warfare Sys/0604562N			SSN Combat Control System Improv (ENG) / F0236					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Hardware Dev Block 1C/CBASS ECP	CPIF	Raytheon Portsmouth, RI	32.000	4.419		8.180		11.000				
Ancillary Hardware Dev (AN/BSG-1)	PD	PEO-CMU Patuxent River, MD	6.195	1.308		0.500		1.081				
AN/BSG-1	CPIF	Raytheon Portsmouth, RI	12.843	0.000		1.800		1.876				
ISLMM	SBIR	SEACORP	0.000	0.102	04/00	0.000		0.000				
Government Engineering	WR	NUWC Newport, RI	31.478	5.358	10/99	7.608	10/00	11.265				
TOMAHAWK Reliability	SBIR	Progeny	0.000	0.074		0.486		1.561				
CSS MK2 Block 1C ECP	FFRDC	MITRE				0.375		0.400				
COTS Hardware & Software	TBD	DDL Omni				6.000		1.561				
Subtotal Product Development			82.516	11.261		24.949		28.744				
Remarks:												
	Contract Block 1C AN/BSG-1 ISLMM	Award/Oblig Jun 96 Jun 97 Apr 00										
Development Support Equipment												
Software Development	Various	Various	24.800	0.000		0.000		0.000				
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			24.800	0.000		0.000		0.000				
Remarks:												

R-1 SHOPPING LIST - Item No. 125

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Submarine Tactical Warfare Sys/0604562N			SSN Combat Control System Improv (ENG) / F0236						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			
Developmental Test & Evaluation	Various	Various	4.700	0.000		0.500		0.000				
Operational Test & Evaluation	Various	Various	5.069	0.000		0.500		0.000				
Test & Evaluation	Various	Various	0.000	1.295		0.000		0.292				
GFE												
Subtotal T&E			9.769	1.295		1.000		0.292				
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	CPFF	EG&G Arlington, VA	8.481	0.000		0.200		0.210				
Travel	PD	NAVSEA Arlington, VA	0.150	0.000		0.100		0.000				
Labor (Research Personnel)												
Overhead												
Subtotal Management			8.631	0.000		0.300		0.210				
Remarks: Contract Award/Oblig EG&G Sep 94												
Total Cost			125.716	12.556		26.249		29.246				
Remarks:												

R-1 SHOPPING LIST - Item No. 125

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5					Ship Contract Design/Live Fire T&E PE 0604567N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	57.901	77.488	130.388						Continuing	Continuing
Carrier Contract Design 42301	33.806	45.887	85.781						Continuing	Continuing
Ship Contract Design S1803	22.892	31.601	44.607						Continuing	Continuing
Ship Specifications S2197	1.195	0.000	0.000						Continuing	Continuing
Live Fire Test & Evaluation S2198	0.000	0.000	0.000						Continuing	Continuing
LHA Replacement S2465	0.008	0.000	0.000						TBD	TBD
Quantity of RDT&E Articles	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<p>A. Mission Description and Budget Item Justification: This Program Element (PE) directly supports the Navy's Shipbuilding Plan by providing for the development of all post Feasibility Study (usually after Program initiation (ex Milestone I)) engineering, programmatic and acquisition documentation (except DD 21 which is covered by PE 0604300N). This includes ship specifications (including performance specifications) and contractual documentation associated with acquisition of Navy ships. This line also supports the Congressionally mandated Live Fire Test and Evaluation program for new ship designs.</p> <p>Contract Design has traditionally been the engineering development of the technical and contractual definition of the ship design (including ship specifications and drawings) to a level of detail sufficient for prospective shipbuilders to make a sound estimate of the construction cost and schedule. Additionally, the contract design package developed under this PE has provided the technical baseline from which the Navy selects the shipbuilder who then develops the detail design package required to support the construction and eventual delivery of the ship. This PE also supports the development of design methodologies which facilitate and optimize the transition from ship design documents to efficient production of new ships and ship conversions, and supports engineering planning and ship affordability studies.</p> <p>Under Acquisition Reform for new design ships, traditional distinct phasing of the design process has been replaced with a continuous concurrent engineering Integrated Product and Process Development (IPPD) process extending through and after contract award. This serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, system programs, and suppliers. Government/Industry Integrated Product Team(s) (IPTs) will utilize the IPPD process to develop the design in an Integrated Product and Data Environment (IPDE). The design approach is part of an acquisition strategy that is based on commercial practices and incorporates a phased technical definition. This may involve continuing efforts (where Program Initiation (ex Milestone I) has not occurred, and/or after Milestone B (ex Milestone II)) in those cases where IPTs would be disrupted after Feasibility Study conclusion and/or award of a shipbuilding contract.</p>										

R-1 SHOPPING LIST - Item No. 126 -1 of 126 -18

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 18)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001																					
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA 5		R-1 ITEM NOMENCLATURE Ship Contract Design/Live Fire T&E PE 0604567N																					
<p>B. Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 15%; text-align: center;">FY 2000</th> <th style="width: 15%; text-align: center;">FY 2001</th> <th style="width: 30%; text-align: center;">FY2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget:</td> <td style="text-align: center;">60.283</td> <td style="text-align: center;">62.204</td> <td style="text-align: center;">81.933</td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: center;">61.135</td> <td style="text-align: center;">78.204</td> <td></td> </tr> <tr> <td>Adjustment to FY2000/2001 Appropriated Value/ FY 2001 President's Budget::</td> <td style="text-align: center;">-3.234</td> <td style="text-align: center;">-0.716</td> <td style="text-align: center;">7.455</td> </tr> <tr> <td>FY 2002PRES Budget Submitt:</td> <td style="text-align: center;">57.901</td> <td style="text-align: center;">77.488</td> <td style="text-align: center;">89.388</td> </tr> </tbody> </table> <p>Funding:</p> <p style="margin-left: 20px;">FY 00 adjustments due to SBIR (-1.200), mid-year adjustment (-.741), SSST Competative Award (-0.500) and minor adjustments (-.793).</p> <p style="margin-left: 20px;">FY 01 adjustments: Congressional pro-rata reduction (-.547), across the board reduction (-100) and minor pricing adustments (-0.069).</p> <p style="margin-left: 20px;">FY 02 adjustments due to CVX adjustment (+19.300), JCC(X) adjustment (-10.000), JCC(X) LFT&E adjustment (-1.977), NWCF Adj. (-0.212) and minor pricing adjustment (.344).</p> <p>Schedule: Schedule changes will be identified in the R-2a exhibits.</p> <p>Technical: Not Applicable.</p>					FY 2000	FY 2001	FY2002	FY 2001 President's Budget:	60.283	62.204	81.933	Appropriated Value:	61.135	78.204		Adjustment to FY2000/2001 Appropriated Value/ FY 2001 President's Budget::	-3.234	-0.716	7.455	FY 2002PRES Budget Submitt:	57.901	77.488	89.388
	FY 2000	FY 2001	FY2002																				
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Appropriated Value:	61.135	78.204																					
Adjustment to FY2000/2001 Appropriated Value/ FY 2001 President's Budget::	-3.234	-0.716	7.455																				
FY 2002PRES Budget Submitt:	57.901	77.488	89.388																				

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Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 18)

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EXHIBIT R-2a, RDT&E Project Justification							DATE:				
							June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5		Ship Contract Design/LFT&E PE 0604567N				Carrier Contract Design 42301					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		33.806	45.887	44.781	85.091	80.745	52.487	28.314	28.955	Continuing	Continuing
RDT&E Articles Qty		0	0	0	0	0	0	0	0	N/A	N/A
<p>A. Mission Description and Budget Item Justification: This project encompasses CVN 77 and CVNX Contract Design and CVNX LFT&E efforts. The traditional distinct phasing of the design process for aircraft carriers has been replaced with a continuous concurrent engineering regime incorporating the methodology, measurement, and management elements of the Navy’s Integrated Product and Process Development (IPPD) process, extending it beyond contract award. CVN 77 Warfare Systems Integration effort will be managed within a technology change management process at contract award to allow further system development. This will ensure that the latest technologies are properly incorporated during the 8 year construction period for an Aircraft Carrier, without costly contract changes. The IPPD process serves to maintain the focus of multi-discipline teams consisting of the government, shipbuilder, aviation programs, and suppliers. Government/Industry Integrated Product Teams (IPTs) utilize the IPPD process within an Integrated Data Environment (IDE) to design and develop ship construction Contract Data Packages (CDPs). The Future Carrier design approach is part of an acquisition strategy that is based on incorporating best available commercial practices and a phased technical definition.</p> <p>The CVN 77 research and development investment identifies and validates transition technologies for incorporation into the CVN 77 design. These technologies will enhance shipboard workload reductions, reduce life cycle costs for CVN 77, provide benefits to the other nine ships of the NIMITZ class, and mitigate future risk for CVN (X). The pivotal investment area is transition technology insertion into, and the functional combining of, traditional combat system, Command, Control, Computers and Communications, Intelligence, Surveillance and Reconnaissance (C4ISR), and aviation functions into a cohesive integrated system. This effort will be herein referred to as Warfare Systems Integration (WSI).</p> <p>CVNX Total Ship Integration, the integration of major systems into ship design, is a continuation of the effort commenced within PE0603512N, PU 42693. This design integration effort includes redesign and rearrangement of ship components; redesign of hull, mechanical and electrical (HM&E) and auxiliary systems (air-conditioning and ventilation, power distribution, airborne noise management, reduction of environmental safety and health (ESH) and interface control); redesign of water production and tankage; electric loads analysis; redesign of power distribution; analysis and redesign of structure; analysis, tracking and management of changes in weight distribution and stability; and analysis and redesign of survivability systems.</p> <p>The CVNX LFT&E effort consists of vulnerability and susceptibility assessments of the new CVNX design and accomplishes congressionally mandated LFT&E.</p> <p>FY 2000 Accomplishments:</p> <p>(U) (\$6.698) Contract Design – This effort completed the Contract Data Package (CDP) necessary to complete the contract design for the CVN 77. The Contract Data Package (CDP) incorporated changes to the ship design, necessary because of equipment obsolescence, and/or the insertion of newer systems/technologies that will reduce life cycle cost and manpower requirements.</p>											

R-1 SHOPPING LIST - Item No. 126 -3 of 126 -18

Exhibit R-2a, RDT&E Project Justification
 (Exhibit R-2a, page 3 of 18)

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA 5	Ship Cont Design/Live Fire T&E PE 0604567	Carrier Contract Design 42301
<p>(U) (\$17.108) Warfare Systems Integration (WSI) – Completed competitive solicitation for an Electronic Systems Integrator (ESI) team to partner with Newport News Shipbuilding in an effort to develop an Integrated Warfare System for the CVN 77. Commenced assessment of the winning ESI concept and its integration into the ship contract data package. Continued monitoring improvements targeted at reducing the life cycle costs of the ship's war fighting systems. Initiatives focused on reducing the number of systems through the use of "multi-function" radars and flat planar antenna arrays, data exchange across operational areas, data fusion, and integrated displays for operators. Initiated post-competition IPTs and commenced trade studies targeted at determining "best value" solutions by balancing cost reductions with operational performance and schedule. Commenced concept design refinement.</p> <p>(U) (\$10.000) Propulsion and Electric Power Generation – Began development of updated detectors and valve control systems to accommodate generic instrumentation and control equipment. Developed validation models and began testing consolidated throttle control and electric plant control panel (EPCP). Completed development and began testing a re-designed purification system. Continued development of improved shielding.</p> <p>FY 2001 PLAN:</p> <p>(U) (\$ 1.139) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.</p> <p>(U) (\$25.268) Warfare Systems Integration – Continue concept design refinement. Continue monitoring improvements targeted at reducing the life cycle costs of the ship's Warfare Systems, including the traditional combat system, C4ISR, and aviation functional requirements. Initiatives remain focused on reducing the number of systems through the use of "multi-function" radars and flat planar antenna arrays, data exchange across operational areas, data fusion, and integrated displays for operators. Continue cooperative radar developments with DD-21 program regarding integration of and procurement of MFR and VSR. Continue exploring additional areas for cooperation with DD-21 such as combat system software integration and common computing. Continue trade studies to mitigate risk and determine "best value" solutions. Continue refinement of Warfare Systems Integration design and integrate into the ship design.</p> <p>(U) (\$11.744) Propulsion and Electric Power Generation – Start development of shipboard equipment for consolidated throttle control and remote EPCP. Complete development and drawings for improved shielding. Complete development and testing of detectors and continue development of valve control system. Continue testing of the purification system and complete drawings and procedure changes.</p> <p>(U) (\$7.736) SmartProduct Model - Obtain design data to advance the development of the smart product model of the CVN/CVNX. Augment the design development of the smart product for additional areas of the ship to provide for cost effective insertion of new technologies through reduction of engineering effort required to incorporate changes and to support more productive automated manufacturing.</p>		

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 18)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																								
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N/ BA 5	PROGRAM ELEMENT NAME AND NUMBER Ship Cont Design/Live Fire T&E PE 0604567	PROJECT NAME AND NUMBER Carrier Contract Design 42301																								
<p>FY 2002 PLAN:</p> <p>(U) (\$1.947) Propulsion and Electric Power Generation - Complete development of consolidated throttle control and remote EPCP. Complete testing of purification system. Complete development of valve control system.</p> <p>(U) (\$9.284) - CVNX LFT&E - Conduct, through completion, a vulnerability assessment of the CVNX design to address LFT&E concerns identified in the TEMP. Conduct susceptibility assessment of the CVNX design. Resolve low confidence areas in analytical models for LFT&E concerns, and conduct LFT&E surrogate test program. This includes testing of Damage Prevention Protection System, DAPS components, underwater protection features (innerbottom structure and Torpedo Side Protection System), dynamic test of hull girder models and conduct of recoverability tests.</p> <p>(U) (\$74.550) Future Carrier Design - Commence resolution of future carrier design issues and update Contract Data Package, including system descriptions, system diagrams, design drawings and specifications in areas where near-term LLTM advanced purchase and early fabrication work may be impacted. The update will accommodate changes to future carriers, future carrier systems, and future carrier equipment necessitated by equipment obsolescence, operational need, and the need to incorporate of newer systems/technology to meet ORD requirements and reduce Total Ownership Cost (TOC). Conduct Total Ship Integration through the IPPD process to incorporate the design changes required to the legacy baseline design for definition at the total system level. Complete conceptual baseline design (including a New Propulsion Plant, Electromagnetic Aircraft Launching System (EMALS), Zonal Electrical Distribution System, Electrical Auxiliaries, Reverse Osmosis Distillate Units, Integrated Warfare Systems, and overall Total Ship Integration Efforts to close System Requirement Review Gaps), conduct In-Process Design Review, and continue development of engineering design package documentation.</p> <table border="1"> <thead> <tr> <th>B. Other Program Funding Summary</th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> </tr> </thead> <tbody> <tr> <td>PE 0603512N/42208 Carrier Sys Development</td> <td>104.240</td> <td>123.378</td> <td>124.469</td> </tr> <tr> <td>PE 0603512N/42693 Carrier Sys Definition</td> <td>23.815</td> <td>14.230</td> <td>33.435</td> </tr> <tr> <td>BLI 200100 Carrier Replacement Program</td> <td>747.503</td> <td>4,038.105</td> <td></td> </tr> </tbody> </table> <p>C. Acquisition Strategy: The Carrier acquisition strategy is that CVN 77 and follow-on hulls will be acquired/managed using a phased technology insertion or "evolutionary" strategy. Technologies include "multi-function" radars and flat planar antenna arrays.</p> <table border="1"> <tbody> <tr> <td>Program Milestones</td> <td>CVN 68 Class has been approved at Milestone III</td> </tr> <tr> <td>Engineering Milestones</td> <td>CVN 68 Class has been approved at Milestone III</td> </tr> <tr> <td>T&E Milestones</td> <td>CVN 68 Class has been approved at Milestone III</td> </tr> <tr> <td>Contract Milestones</td> <td>CVN 68 Class has been approved at Milestone III</td> </tr> </tbody> </table>			B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002	PE 0603512N/42208 Carrier Sys Development	104.240	123.378	124.469	PE 0603512N/42693 Carrier Sys Definition	23.815	14.230	33.435	BLI 200100 Carrier Replacement Program	747.503	4,038.105		Program Milestones	CVN 68 Class has been approved at Milestone III	Engineering Milestones	CVN 68 Class has been approved at Milestone III	T&E Milestones	CVN 68 Class has been approved at Milestone III	Contract Milestones	CVN 68 Class has been approved at Milestone III
B. Other Program Funding Summary	FY 2000	FY 2001	FY 2002																							
PE 0603512N/42208 Carrier Sys Development	104.240	123.378	124.469																							
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T&E Milestones	CVN 68 Class has been approved at Milestone III																									
Contract Milestones	CVN 68 Class has been approved at Milestone III																									

R-1 SHOPPING LIST - Item No. 126 -5 of 126 -18

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 5 of 18)

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Exhibit R-3 Cost Analysis (page 1)								DATE:						
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT		PROJECT NAME AND NUMBER				
RDT&E, N/BA 5								Ship Cont Design/Live Fire T&E PE 0604567		Carrier Contract Design 42301				
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 2002 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract		
Product Development	PR,SS	Newpt News Shipbldg, Va	18.548	14.865	11/99	26.036	01/01	27.795	11/01	Cont.	Cont.	Cont.		
	SS,CPFF	Bettis Atomic Power Labs,Pa	19.000	10.000	11/99	11.744	10/00	1.947	10/01	0.000	42.691	42.691		
	WR	NAWC Lakehurst NJ	2.828	0.790	02/00	0.360	03/01	0.730	12/01	Cont.	Cont.	Cont.		
	WR	NSWC Dahlgren Va	4.515	3.805	02/00	3.383	12/00	2.634	12/01	Cont.	Cont.	Cont.		
	GSA	Nichols Advance Marine, Va	3.049				12/00			Cont.	Cont.	Cont.		
	PD/WR	SPAWAR, Ca	1.680	0.430	02/00	0.820	11/00	0.629	11/01	Cont.	Cont.	Cont.		
	WR	NSWC Carderock MD		1.324	02/00	0.100	12/00	0.675	11/01	Cont.	Cont.	Cont.		
	FAD	PEO DD 21	0.200	1.000	02/00	0.000	11/00	0.000	11/01	Cont.	Cont.	Cont.		
	Various	Miscellaneous (under \$1M)	14.117	1.502	11/99-6/00	3.050	11/00	1.007	11/01	Cont.	Cont.	Cont.		
SBIR		Miscellaneous				1.139								

R-1 SHOPPING LIST - Item No. 126-6 of 126-18

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 18)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)									DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Cont Design/Live Fire T&E PE 0604567			Carrier Contract Design 42301						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total Award Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 2002 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation			0.000	0.000	02/00	0.000	01/00	0.000	01/00		0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Live Fire Test & Evaluation	TBD	NSWC CD, MD						9.284		0.000	9.284	9.284
Subtotal T&E			0.000	0.000		0.000		9.284		0.000	9.284	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel				0.090		0.075		0.080			0.245	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.090		0.075		0.080		0.000	0.245	
Remarks:												
Total Cost			63.937	33.806		45.887		44.781		Continuing	Continuing	Continuing
Remarks:												

R-1 SHOPPING LIST - Item No. 126 -7 of 126 -18

Exhibit R-3, Project Cost Analysis
 (Exhibit R-3, page 7 of 18)
UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5	Ship Contract Design/LFT&E PE 0604567N				Ship Contract Design S1803					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	22.892	31.601	44.607						Continuing	Continuing
RDT&E Articles Qty		0	0						N/A	N/A

A. Mission Description and Budget Item Justification: This project supports development of all technical, programmatic and contractual documentation required after feasibility studies for the acquisition of various ships in the Navy's Shipbuilding Program. The major effort is the engineering development of the technical and contractual definition of the ship's design (e.g. ship specifications and drawings), with sufficient details for the prospective shipbuilder to make a sound estimate of construction cost and schedule. It also serves as the technical definition from which the shipbuilder develops the shipbuilding detailed design and testing package required to build and test the ship. This funding also provides for Navy retention of unique ship design knowledge. It provides the Navy with a digital, ship design knowledge base, including lessons learned, required to ensure that a proper development, analysis and evaluation can be conducted of any current or future planned Navy ship. This data base will serve as the basis to evaluate and qualify any future ship design. Another area this project funds is the development of specific Navy ship criteria and standards for newly developed technologies. Additionally, as new laws are passed, new safety regulations and environmental criteria are developed and other legal/Congressional requirements identified, this project funds the translation into Navy ship design criteria and standards. This project also funds the translation of the traditional Ship Specifications into performance-based criteria, which will serve for the future acquisition of Navy Ships.

FY 2000 Accomplishments:

- (U) (\$ 5.045) Continued Planning Yard CG Modernization Contract Design.
- (U) (\$ 3.000) Commenced CG Government Team support for design products.
- (U) (\$ 1.800) Commenced CG Electronic System design.
- (U) (\$ 4.915) Commenced T-ADC(X) Industry teams to support Engineering Design efforts.
- (U) (\$ 7.558) Commenced T-ADC(X) Government/Industry teams, develop RFP and support Source Selection.
- (U) (\$ 0.574) Commenced Trimaran Design.

FY 2001 PLAN:

- (U) (\$13.248) Continue Planning Yard CG Modernization Contract Design.
- (U) (\$ 7.390) Continue CG Government Team support for design products, including ship design data base and specifications.
- (U) (\$ 2.000) Continue CG Electronic System design.
- (U) (\$ 0.556) Continue Trimaran Design.
- (U) (\$ 7.741) Commence Littoral Support Fast Patrol Craft Design.
- (U) (\$ 0.666) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

R-1 SHOPPING LIST - Item No. 126 -8 of 126 -18

Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 8 of 18)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																					
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5	PROGRAM ELEMENT NAME AND NUMBER Ship Contract Design/LFT&E PE 0604567N	PROJECT NAME AND NUMBER Ship Contract Design S1803																					
<p>FY 2002 PLAN:</p> <p>(U) (\$8.011) Continue Planning Yard CG Modernization Contract Design.</p> <p>(U) (\$ 6.300) Continue CG Government Team support for design products, including ship design data base and specifications.</p> <p>(U) (\$ 1.650) Continue CG Electronic System design.</p> <p>(U) (\$ 12.300) Commence JCC(X) Ship Design by Industry Teams</p> <p>(U) (\$5.900) Commence JCC(X) Mission Package Design</p> <p>(U) (\$6.746) Commence JCC(X) Ship Design Acquisition Documentation Development</p> <p>(U) (\$3.700) Commence Host Platform Design Definition</p> <p>B. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: right;">FY 2000</th> <th style="width: 10%; text-align: right;">FY 2001</th> <th style="width: 10%; text-align: right;">FY 2002</th> <th style="width: 10%;"></th> <th style="width: 10%; text-align: right;">T o</th> <th style="width: 10%; text-align: right;">Total</th> </tr> </thead> <tbody> <tr> <td>PE 0603563N Ship Concept Advanced Design</td> <td style="text-align: right;">31.995</td> <td style="text-align: right;">5.115</td> <td style="text-align: right;">1.949</td> <td></td> <td></td> <td></td> </tr> <tr> <td>PE 0603564N Ship Preliminary Design & Feasibility Studies</td> <td style="text-align: right;">9.969</td> <td style="text-align: right;">56.374</td> <td style="text-align: right;">14.922</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>C. Acquisition Strategy:</p> <p>D. Schedule:</p>				FY 2000	FY 2001	FY 2002		T o	Total	PE 0603563N Ship Concept Advanced Design	31.995	5.115	1.949				PE 0603564N Ship Preliminary Design & Feasibility Studies	9.969	56.374	14.922			
	FY 2000	FY 2001	FY 2002		T o	Total																	
PE 0603563N Ship Concept Advanced Design	31.995	5.115	1.949																				
PE 0603564N Ship Preliminary Design & Feasibility Studies	9.969	56.374	14.922																				

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E PE 0604567N			Ship Contract Design S1803						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Class Drawings	SS/CPAF	Ingalls Shipbuilding, Pascago	Cont.	5.045	Note 1	16.890	Continuing	8.011	Note 1	Continuing	Continuing	Continuing
Electronic Systems	C/CPAF	LMGES, Morristown, NJ	0.000	1.800	N/A	2.850	Note 1	1.000	Note 1	Continuing	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	JJMA, Arlington VA	Continuing	3.609	Note 1	0.500	Note 1	0.520	Note 1	Continuing	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	CSCAME	Continuing	1.339	Note 1	0.500	Note 1	4.000	Note 1	Continuing	Continuing	Continuing
Equipment Support	WR	NSWC, MD/PA/VA	Continuing	0.140	TBD	1.000	N/A	5.332	11/01	Continuing	Continuing	Continuing
Engineering Design	MISC	Shipyards /TBD	Continuing	5.400	TBD	0.000	MISC	15.000	N/A	0.000	Continuing	Continuing
Ship Integration/Systems Engineering	C/CPFF	Gibbs and Cox	0.000	0.000	N/A	0.000	N/A	0.620	N/A	0.000	0.620	0.620
Mission System Design	WR	SPAWAR, San Diego,CA	Continuing	0.000	N/A	0.000	N/A	3.891	TBD	Continuing	Continuing	Continuing
Littoral Craft Design	PD	ONR, Arlington,VA	0.000	0.000	N/A	7.944	11/00	0.000	N/A	0.000	7.944	7.944
Subtotal Product Development			Continuing	17.333		29.684		38.374		Continuing	Continuing	Continuing
Remarks: Note 1. Existing Contract												
Engineering Support	Misc	Misc	Continuing	3.519	Misc	0.873	Misc	0.000	Misc	Continuing	Continuing	Continuing
Software Development			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Training Development	WR	ATRC	0.000	0.000		0.000		1.269	Misc	0.000	1.269	1.269
Integrated Logistics Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Configuration Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Technical Data			0.000	0.000		0.000		0.000		0.000	0.000	0.000
GFE			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Subtotal Support			Continuing	3.519		0.873		1.269		Continuing	Continuing	Continuing
Remarks:												

R-1 SHOPPING LIST - Item No. 126 -10 of 126 -18

Exhibit R-3, Project Cost Analysis
 (Exhibit R-3, page 10 of 18)
UNCLASSIFIED

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Contract Design/Live Fire T&E PE 0604567N			Ship Contract Design S1803						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Operational Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Tooling	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
Contractor Engineering Support		Misc	0.000	0.000		0.000		1.643		0.000	1.643	2.710
Government Engineering Support	Misc	Misc	Continuing	1.000	Misc	0.000	Misc	1.621	Misc	Continuing	Continuing	Continuing
Program Management Support	Misc	Misc	Continuing	1.000	Misc	1.004	Misc	1.500	Misc	Continuing	Continuing	Continuing
Travel	N/A	N/A	Continuing	0.040	Misc	0.040	Misc	0.200	Misc	Continuing	Continuing	Continuing
Labor (Research Personnel)			0.000	0.000		0.000				0.000	0.000	0.000
Overhead			0.000	0.000		0.000				0.000	0.000	0.000
Subtotal Management			Continuing	2.040		1.044		4.964		Continuing	Continuing	Continuing
Remarks:												
Total Cost			Continuing	22.892		31.601		44.607		Continuing	Continuing	Continuing
Remarks:												

R-1 SHOPPING LIST - Item No. 126 -11 of 126 -18

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 11 of 18)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001																					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER																							
RDT&E, N/BA 5	Ship Contract Design/Live Fire T&E PE 0604567N				Ship Specifications S2197																							
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost																		
Project Cost	1.195	0.000	0.000						Continuing	Continuing																		
RDT&E Articles Qty		0	0						N/A	N/A																		
<p>A. Mission Description and Budget Item Justification: This project funds the development, improvement, and update of NAVSEA cognizant acquisition specifications including integration of Federal and Military Specifications, handbooks, general specifications for Ships of the U.S. Navy and COTS equipment/systems into a Performance Based, biddable ship contract design acquisition package. These documents are required to reflect the latest technologies (i.e. open systems architecture for information and power systems), manufacturing techniques, environmental requirements, hazardous material reduction, safety and legal/Congressional requirements.</p> <p>FY 2000 Accomplishments: (\$0.470) Continued to develop, improve and update NAVSEA cognizant acquisition specifications. Continued development of specification data base and Open Systems architecture. (\$0.725) Continued development of Performance Based Ship Acquisition Specification Program.</p> <p>FY 2001 Plan: N/A</p> <p>FY 2002 Plan: N/A</p> <p>B. Other Program Funding Summary</p> <table> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>To</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>PE 0603563N Ship Concept Advanced Design</td> <td>31.995</td> <td>5.115</td> <td>1.949</td> <td></td> <td></td> </tr> <tr> <td>0603564N Ship Preliminary Design & Feasibility Studies</td> <td>9.969</td> <td>56.374</td> <td>14.922</td> <td></td> <td></td> </tr> </tbody> </table> <p>C. Acquisition Strategy: N/A</p> <p>D. Schedule Profile: N/A</p> <p>~</p>												FY 2000	FY 2001	FY 2002	To	Total	PE 0603563N Ship Concept Advanced Design	31.995	5.115	1.949			0603564N Ship Preliminary Design & Feasibility Studies	9.969	56.374	14.922		
	FY 2000	FY 2001	FY 2002	To	Total																							
PE 0603563N Ship Concept Advanced Design	31.995	5.115	1.949																									
0603564N Ship Preliminary Design & Feasibility Studies	9.969	56.374	14.922																									

R-1 SHOPPING LIST - Item No. 126 -12 of 126 -18

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 12 of 18)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5				0604567N Ship Contract Design LF T&E				Ship Specifications S2197					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000	
Ancillary Hardware Development			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000	
Performance Based Specifications	C/CPFF	JJMA, Arlington, VA	Continuing	0.700	Note 1	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Specification Improvements	C/CPFF	AME, Arlington, VA	Continuing	0.400	Note 1	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
Specification Improvements	Misc.	Misc.	Continuing	0.000	Misc.	0.000	N/A	0.000	N/A	Continuing	Continuing	Continuing	
GFE			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000	
Award Fees			0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000	
Subtotal Product Development			Continuing	1.100		0.000		0.000		Continuing	Continuing	Continuing	
Remarks: Note 1. Existing Contract													
Development Support Equipment	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Software Development	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Training Development	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Integrated Logistics Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Configuration Management	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Technical Data	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	N/A	
Remarks:													

R-1 SHOPPING LIST - Item No. 126 -13 of 126 -18

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 13 of 18)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			PE 0604567N Ship Contract Design/LFT&E			Ship Specifications S2197						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Operational Test & Evaluation	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Tooling	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
GFE	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Government Engineering Support	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Program Management Support	C/CPFF	ROH, Arlington, VA	Continuing	0.095	Note 1	0.000	Note 1	0.000	Note 1	Continuing	Continuing	Continuing
Travel	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Labor (Research Personnel)	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Overhead	N/A	N/A	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal Management			Continuing	0.095		0.000		0.000		Continuing	Continuing	Continuing
Remarks: Note 1: This is an existing level of effort contract which will be funded by tasks each FY.												
Total Cost			Continuing	1.195		0.000		0.000		Continuing	Continuing	Continuing
Remarks:												

R-1 SHOPPING LIST - Item No. 126 -14 of 126 -18

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 14 of 18)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5	PROGRAM ELEMENT NAME AND NUMBER Ship Contract Design LFT&E 0604567N				PROJECT NAME AND NUMBER LHA Replacement S2465					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.008	0.000	0.000						TBD	TBD
RDT&E Articles Qty	0	0	0						N/A	

A. Mission Description and Budget Item Justification: The five ships of the LHA 1 Class are scheduled to reach the end of their 35 year service life starting in 2011. Replacement ships are required to support amphibious operations.

The LHA 1 class is a multi purpose amphibious assault ship delivered to the Navy in the 1970's. The design merged the flight deck of an LPH and a vehicle and well deck of an LPD. The design allowed the use of helicopters and landing craft to conduct amphibious assaults. As technology has evolved, new amphibious assault systems have been introduced into service (e.g. LCAC) which required the modification of the LHA design, resulting in the LHD 1 Class. New systems being developed require advances in ship capabilities. The MV-22, AAV and the JSF are currently in development and, in order to fully integrate these systems, a ship with greater flight deck capability and improved stability is required. Future programs such as the CH-53E and AH-1Z replacement aircraft will further stress current ship designs. To facilitate new USMC operational doctrine, such as OMFTS, STOM and Seabased logistics, the operational requirements will increase.

FY 2000 Accomplishments:

(\$0.008) Commenced LHA Replacement Design Planning.

FY 2001 PLAN: N/A

FY 2002 PLAN: N/A

R-1 SHOPPING LIST - Item No. 126 -15 of 126 -18

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 15 of 18)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification				DATE:																			
				June 2001																			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER		PROJECT NAME AND NUMBER																			
RDT&E, N/BA 5		Ship Contract Design/Live Fire T&E PE 0604567N		LHA Replacement 2465																			
<p>B. Other Program Funding Summary</p> <table> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>To</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>PE 0603563N Ship Concept Advanced Design</td> <td>31.995</td> <td>5.115</td> <td>1.949</td> <td></td> <td></td> </tr> <tr> <td>PE 0603564N Ship Preliminary Design & Feasibility Studies</td> <td>9.969</td> <td>56.374</td> <td>14.922</td> <td></td> <td></td> </tr> </tbody> </table> <p>C. Acquisition Strategy: The acquisition strategy will see a design competition in the early contract design phase (Phase I) with a down select to a single industry team for Phase II. Detail design and construction will be awarded to a single industry team. The Navy will conduct an Analysis of Alternatives(AOA) and identify design requirements. Industry teams may then compete for the Phase I Contract Design with a down select for Phase II. The Detail Design and Construction could be awarded to that team or competed.</p> <p>D. Schedule: Award is scheduled for FY 08</p>							FY 2000	FY 2001	FY 2002	To	Total	PE 0603563N Ship Concept Advanced Design	31.995	5.115	1.949			PE 0603564N Ship Preliminary Design & Feasibility Studies	9.969	56.374	14.922		
	FY 2000	FY 2001	FY 2002	To	Total																		
PE 0603563N Ship Concept Advanced Design	31.995	5.115	1.949																				
PE 0603564N Ship Preliminary Design & Feasibility Studies	9.969	56.374	14.922																				

R-1 SHOPPING LIST - Item No. 126 -16 of 126 -18

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 16 of 18)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT PE 0604567N				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5				Ship Contract Design/Live Fire T&E				LHA Contract Design S2465					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Ancillary Hardware Development	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Systems Engineering	C/CPFF	CSC AME	Arlington, VA	0.000	0.008	Note 1	0.000	N/A	0.000	N/A	0.000	0.008	0.008
Licenses	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Tooling	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
GFE	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Award Fees	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal Product Development				0.000	0.008		0.000		0.000		0.000	0.008	0.000
Remarks: Existing Contract													
Development Support Equipment	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Software Development	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Training Development	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Integrated Logistics Support	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Configuration Management	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Technical Data	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
GFE	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal Support				0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:													

R-1 SHOPPING LIST - Item No. 126 -17 of 126 -18

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 17 of 18)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5				PROGRAM ELEMENT PE 0604567N Ship Contract Design/Live Fire T&E			PROJECT NAME AND NUMBER LHA Contract Design S2465						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location		Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Operational Test & Evaluation	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Tooling	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
GFE	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	
Subtotal T&E				0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:													
Design Management Support	C/CPFF	AME, Arlington VA		0.000	0.000	N/A	0.008	Note 1	0.500	N/A	Continuing	Continuing	Continuing
Government Engineering Support	WR	Various VA,MD,PA		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Program Management Support	N/A	TBD		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Travel	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	TBD	0.000	N/A
Labor (Research Personnel)	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Overhead	N/A	N/A		0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	N/A
Subtotal Management				0.000	0.000		0.000		0.000		Continuing	Continuing	Continuing
Remarks: Note 1. Existing Contract													
Total Cost				0.000	0.008		0.000		0.000		Continuing	Continuing	Continuing
Remarks:													

R-1 SHOPPING LIST - Item No. 126 -18 of 126 -18

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 18 of 18)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001																											
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE Navy Tactical Computer Resources/0604574N																													
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost																								
Total PE Cost	56.160	30.608	3.836																															
Standard Hardware/21353	55.367	29.646	2.850																															
AN/AYK-14/W0845*	0.000	0.000	0.000																															
NWTDB/X2265	0.793	0.962	0.986																															
Quantity of RDT&E Articles																																		
<p>*Project Unit W0845 is combined with P.E. 0604215N, Project Unit W0572 beginning FY00.</p> <p>A. Mission Description and Budget Item Justification: The Standard Hardware project in combination with UYQ-70 Display Improvements will perform the system engineering necessary to verify Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technologies and products as suitable for introduction into the AN/UYQ-70(V) Advanced Display System product line. The Naval Warfare Tactical Data Base (NWTDB) is an information management infrastructure project to solve data interoperability problems and implement DoD data architecture and standards in Navy. NWTDB is the data architecture component of Copernicus. NWTDB has developed management and engineering processes to define and translate information needs to automated systems, and to manage changes resulting from new operational requirements or technology advances.</p> <p>B. Program Change Summary:</p> <table style="width: 100%; margin-top: 20px;"> <tr> <td></td> <td style="text-align: right;">FY 2000</td> <td style="text-align: right;">FY 2001</td> <td style="text-align: right;">FY 2002</td> </tr> <tr> <td>FY 2001 President's Budget:</td> <td style="text-align: right;">57.978</td> <td style="text-align: right;">3.291</td> <td style="text-align: right;">4.092</td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: right;">58.300</td> <td style="text-align: right;">30.891</td> <td></td> </tr> <tr> <td>Adjustment to FY 2000/FY 2001 Appropriated Value/</td> <td style="text-align: right;">-1.818</td> <td style="text-align: right;">27.317</td> <td style="text-align: right;">-0.256</td> </tr> <tr> <td>FY 2001 President's Budget:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2002 PRES Budget Submit:</td> <td style="text-align: right;">56.160</td> <td style="text-align: right;">30.608</td> <td style="text-align: right;">3.836</td> </tr> </table>												FY 2000	FY 2001	FY 2002	FY 2001 President's Budget:	57.978	3.291	4.092	Appropriated Value:	58.300	30.891		Adjustment to FY 2000/FY 2001 Appropriated Value/	-1.818	27.317	-0.256	FY 2001 President's Budget:				FY 2002 PRES Budget Submit:	56.160	30.608	3.836
	FY 2000	FY 2001	FY 2002																															
FY 2001 President's Budget:	57.978	3.291	4.092																															
Appropriated Value:	58.300	30.891																																
Adjustment to FY 2000/FY 2001 Appropriated Value/	-1.818	27.317	-0.256																															
FY 2001 President's Budget:																																		
FY 2002 PRES Budget Submit:	56.160	30.608	3.836																															

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2, RDT&E Budget Item Justification

(Exhibit R-2, page 1 of 11)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	R-1 ITEM NOMENCLATURE Navy Tactical Computer Resources/0604574N	
<p>Funding: FY-00 funding decrease is due to Small Business Reform Initiative (-\$1.277), BTR by N6e for the WINSAT (-\$0.062), proportionate recission (-\$0.223) and minor pricing adjustments (-\$0.256).</p> <p>FY-01 funding increase is due to congressional adds for AN/UYQ-70 (+\$19.600) and Sub Combat SYS Q-70 Retrofits (+8.000) and decrease for .7% pro-rata reduction (-\$0.216) and minor pricing adjustments (-\$0.67).</p> <p>FY-02 funding decrease is due to minor departmental adjustments (-\$0.224) and minor pricing adjustments (-\$0.32).</p>		

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 11)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Navy Tactical Computer Resources/0604574N				PROJECT NAME AND NUMBER Standard Hardware/21353					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	55.373	29.646	2.850							
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification: Perform the system engineering necessary to verify Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technologies and products as suitable for introduction into the AN/UYQ-70(V) Advanced Display System product line.

(U) Program Accomplishment and Plans:

FY 2000 ACCOMPLISHMENTS:

- (U) (\$1.000) Performed intensive study and testing of COTS/OSA technology that adhered to standards.
- (U) (\$0.535) Adapted these technologies and products to the Navy's tactical display/processor needs in the future.
- (U) (\$0.644) Met Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future.
- (U) (\$19.388) Adapted AN/UYQ-70 for SSN 688/Trident applications
- (U) (\$4.893) Continued to develop Computer-Aided Dead Reckoning Tracer (CADRT)
- (U) (\$24.047) AN/UYQ-70 Technology Refreshment
- (U) (\$4.860) Advanced Digital Logistics

FY 2001 PLANS:

- (U) (\$0.791) Perform intensive study and testing of COTS/OSA technology that adheres to standards.
- (U) (\$0.620) Adapt these technologies and products to the Navy's tactical display/processor needs in the future.
- (U) (\$0.647) Meet Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future.
- (U) (\$19.192) AN/UYQ-70 Technology Refreshment
- (U) (\$0.669) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.
- (U) (\$7.727) Submarine Combat System Q-70 Retrofits

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 3 of 11)

UNCLASSIFIED

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Navy Tactical Computer Resources/0604574N	PROJECT NAME AND NUMBER Standard Hardware/21353
<p>FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$1.000) Perform intensive study and testing of COTS/OSA technology that adheres to standards.- (U) (\$0.750) Adapt these technologies and products to the Navy's tactical display/processor needs in the future.- (U) (\$1.264) Meet Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future. <p>B. Other Program Funding Summary: N/A</p> <ul style="list-style-type: none">- (U) Related RDT&E<ul style="list-style-type: none">PE 0603270N (ELECTRONIC WARFARE ADVANCED TECHNOLOGY)PE 0603382N (ADV COMBAT SYSTEM TECHNOLOGY)PE 0603502N (SHALLOW WATER MCM)PE 0603755N (COOPERATIVE ENGAGEMENT)PE 0604307N (AEGIS WEAPON SYSTEM MODS)PE 0604366N (STANDARD MISSILE IMPROVEMENTS)PE 0604372N (NEW THREAT UPGRADE)PE 0604755N (SHIP SELF DEFENSE) <p>C. Acquisition Strategy: N/A</p> <p>D. Schedule Profile: N/A</p>		

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 11)

UNCLASSIFIED

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Exhibit R-3 Cost Analysis (page 1)									DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N			Standard Hardware/21353						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 01 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	189.900	5.600		0.000				0.000	195.500	179.600
Ancillary Hardware Development			0.350	0.300						0.650		
Systems Engineering	Various	Various	45.341	16.285		1.950				CONT.	CONT.	CONT.
Licenses			0.500	0.500							1.000	
Tooling			0.500	0.500							1.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			236.591	23.185		1.950				CONT.	CONT.	CONT.
Remarks:												
Development Support Equipment											0.000	
Software Development	Various	Various	36.873	2.461		0.000				0.000	39.334	32.373
Training Development			1.000	0.600							1.600	
Integrated Logistics Support			1.597	0.800							2.397	
Configuration Management			0.500	0.200							0.700	
Technical Data			0.738	0.400							1.138	
GFE											0.000	
Subtotal Support			40.708	4.461		0.000				0.000	45.169	
Remarks:												

R-1 SHOPPING LIST - Item No. 127

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 11)

UNCLASSIFIED

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Exhibit R-3 Cost Analysis (page 2)									DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N			Standard Hardware/21353						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	23.085	1.200		0.250				CONT.	CONT.	CONT.
Operational Test & Evaluation	Various	Various	16.238	0.400		0.250				CONT.	CONT.	CONT.
Tooling											0.000	
GFE											0.000	
Subtotal T&E			39.323	1.600		0.500				CONT.	CONT.	CONT>
Remarks:												
Contractor Engineering Support	Various	Various	12.827	0.300		0.300				CONT.	CONT.	CONT.
Government Engineering Support	Various	Various	25.000	0.000		0.000				0.000	25.000	N/A
Program Management Support											0.000	
Travel			1.622	0.100		0.100				CONT.	CONT.	N/A
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			39.449	0.400		0.400				CONT.	CONT.	CONT.
Remarks:												
Total Cost			356.071	29.646		2.850				CONT.	CONT.	CONT.
Remarks:												

R-1 SHOPPING LIST - Item No. 127

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 11)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification						DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5		Navy Tactical Computer Resources/0604574N				Naval Warfare Tactical Data Base/X2265					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.793	0.962	0.986							
RDT&E Articles Qty											
<p>A. Mission Description and Budget Item Justification: The Naval Warfare Tactical Database (NWTDB) is an information management infrastructure project to solve data interoperability problems and implement DoD data architecture and standards in Navy. NWTDB has developed management and engineering processes to define and translate information needs to automated systems and to manage changes resulting from new operational requirements or technology advances. Database integration, data standardization, and configuration management are supported by reverse engineering database structures and definitions into a common format to facilitate data interoperability problem identification and resolution. The management and engineering processes and authoritative database structures are documented in the NWTDB Standards Manual which is distributed to Navy C4ISR and combat system architects, system developers, reference database producers, other services and agencies, and selected foreign governments. The Data Analysis and Reconciliation Tool (DART) is a Microsoft Windows-based application that was developed using an evolutionary process to support the full information management life cycle, i.e., linking databases and transfer formats to operational information requirements. DART supports systems documentation, configuration management, DoD standard data element generation, and requirements traceability. In August 1996, DASN C4I recommended the NWTDB process and DART tool to ASD C3I as a practical approach to solve data interoperability problems and support database integration, especially for the Global Command and Control System. NWTDB management process received OSD award in 1993. Management responsibilities are defined in OPNAVINST 9410.6 of 13 Jul 93, "NWTDB Requirements for Tactical Naval Warfare Systems," which implements DoD Directive 4630.5 of 12 Nov 92, "Compatibility, Interoperability and integration of Tactical Command, Control, Communication and Intelligence (C3I) Systems," and DoD Directive 8320.1 of 26 Sep 91, "DoD Data Administration." OPNAVINST 9410.6 also specifies that Navy system developers and database producers will transition to NWTDB data standards and structures by the year 2000.</p>											

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 7 of 11)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Navy Tactical Computer Resources/0604574N	PROJECT NAME AND NUMBER Naval Warfare Tactical Data Base/X2265
<p>(U) Program Accomplishment and Plans:</p> <p>FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none">- (U) (\$0.069) Developed DART 3.2 and user guide to include Hyper Text Markup Language (HTML) online publishing capability.- (U) (\$0.400) Continued to register Naval tactical systems with emphasis on track data and data link message sets as coordinated with Fleet Information Warfare Center (FIWC) and Data Reconfiguration Working Group (DRWG).- (U) (\$0.025) Participated with Copernicus Requirements Working Group (CRWG) to identify and resolve selected data fill/data format issues. Prioritize issues with recommendations to program office on which ones to develop and enhance capability.- (U) (\$0.125) Developed procedures for real-time standards management on the Worldwide Web. Published Version Six online, with ongoing continuing updates.- (U) (\$0.089) Enhance DART with the capability of linking systems data requirements to mission traceability, as well as support the Chief Information Officer (CIO) assessment.- (U) (\$0.085) Acted as liaison to Defense Information Systems Agency (DISA) data standardization efforts to promote Navy standards. Performed research on data standardization, which resulted in submitting data models/data elements as candidate DoD standards. <p>FY 2001 PLANS:</p> <ul style="list-style-type: none">- (U) (\$0.120) Enhance DART to support user requirements.- (U) (\$0.120) Incorporate emerging commercial standards, technologies and trends for inclusion in the NWTDB standard.- (U) (\$0.311) Continue participation with FIWC/DRWG/others as required to prioritize data fill/data standardization issues. Prioritize issues with recommendations to program office.- (U) (\$0.071) Participate with CRWG to identify and resolve selected data fill/data format issues. Prioritize issues with recommendations to program office.- (U) (\$0.180) Update and improve capability of NWTDB Web environment. Create comprehensive Web site with applicable Naval/DoD publications, instructions, links and guidance to system developers on information engineering.- (U) (\$0.160) Act as liaison to DISA data standardization efforts to promote Navy standards. Continue research on data standardization in order to submit data models/data elements as candidate DoD standards.		

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 8 of 11)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER Navy Tactical Computer Resources/0604574N	PROJECT NAME AND NUMBER Naval Warfare Tactical Data Base/X2265
<p>FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$0.190) Continue development of DART to support user requirements, including support for evolving operating systems.- (U) (\$0.125) Participate with CRWG to identify and resolve selected data fill/data format issues. Prioritize issues and provide program office with recommendations.- (U) (\$0.249) Incorporate emerging commercial standards, technologies and trends for inclusion in the NWTDB standard.- (U) (\$0.162) Expand the Naval C3I Data Model as required to support ongoing integration and development efforts.- (U) (\$0.160) Update and improve the NWTDB standard and associated documentation on the Web. Mirror and expand the site on the Secret Internet Protocol Routing Network (SIPRNET).- (U) (\$0.160) Act as liaison with DISA data standardization efforts to promote Navy standards. Continue research on data standardization in order to submit data models/data elements as candidate DoD standards. <p>B. Other Program Funding Summary: N/A (U) Related RDT&E: N/A</p> <p>C. Acquisition Strategy: N/A</p> <p>D. Schedule Profile: N/A</p>		

R-1 SHOPPING LIST - Item No. 127

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 9 of 11)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N			Naval Warfare Tactical Data Base/X2265						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	BPA	ORCI, Hanahan, SC	1.517	0.561	10/00	0.172	10/01			CONT.	CONT.	CONT.
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			1.517	0.561		0.172				CONT.	CONT.	CONT.
Remarks:												
Development Support Equipment												
Software Development	BPA	ORCI, Hanahan, SC	1.599	0.320	10/00	0.714	10/01			CONT.	CONT.	CONT.
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			1.599	0.320		0.714		0.000		CONT.	CONT.	CONT.
Remarks:												

R-1 SHOPPING LIST - Item No. 127

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 10 of 11)

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Navy Tactical Computer Resources/0604574N			Naval Warfare Tactical Data Base/X2265						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000					0.000	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	BPA	BAH, San Diego, CA	0.137	0.000	N/A	0.000	N/A					CONT.
Program Management Support	FFP	PRC, San Diego, CA	0.360	0.081	10/00	0.100	10/01			CONT.	CONT.	CONT.
Travel	N/A	SPAWAR, San Diego, CA	0.092	0.000	N/A	0.000	N/A					N/A
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.589	0.081		0.100				CONT.	CONT.	CONT.
Remarks:												
Total Cost			3.705	0.962		0.986				CONT.	CONT.	CONT.
Remarks:												

R-1 SHOPPING LIST - Item No. 127

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 11 of 11)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
							June 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY/BA 5					Mine Development/0604601N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	3.276	1.635	0.000							
Mine Improvement Q0267	3.276	1.635	0.000							
Quantity of RDT&E Articles	N/A	2 EDMs	N/A	N/A	N/A	N/A	N/A	N/A		
A. Mission Description and Budget Item Justification (U) This project is the only R&D program for mine systems, and is the sole support for the capability to maintain the effectiveness of mines facing new threat targets and increasing emphasis on major regional conflicts and littoral warfare in shallow water. Project tasks are grouped into several areas: (1a) Threat Modeling/Analysis, which collects, analyzes, and develops digital models of data on current priority threat target characteristics to support computer simulations; (1b) Target Detection and Response, which uses target models to develop optimal mine designs, settings, and firing algorithms; (2a) Components/Subsystems, which develops upgrades of mine components to maintain effectiveness against current threat targets using proven state-of-the-art technology including a remote controlled mine capability (RECO); (2b) Advanced Power sources, which develops improved batteries without hazardous heavy metals, and (3) New mines, which designs and develops new mines, including an Improved Submarine-Launched Mobile Mine (ISLMM) . These efforts under (1) and (2) are currently Non-ACAT; the Improved Submarine-Launched Mobile Mine is an ACAT III, International Cooperative R&D program with the RAN. The Mission Need Statement (MNS M044-85-93) for an Improved Submarine-Launched Mobile Mine (ISLMM) was approved on 13 December 1993. The MNS shows a Fleet need to have a covert mining capability and to eliminate reliability problems associated with the existing MK 67 SLMM. The ISLMM will be used to sustain and improve the USN covert mining capability by converting existing MK48 Torpedoes into dual warhead mines. It will feature dual mine sections and utilize the advanced Target Detection Device (TDD) MK71. The ISLMM program was terminated in FY 00 by POM 02.										

R-1 SHOPPING LIST - Item No. 128

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY/BA 5	R-1 ITEM NOMENCLATURE Mine Development/0604601N	
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none">Product Development- (U) (\$0.908) Primary Hardware - Began design and development of RECO capability and ISLMM EDMs.- (U) (\$1.057) Systems Engineering - Began system engineering and requirements breakdown for ISLMM.Development Support Equipment- (U) (\$0.347) Software Development - Began tactical software development for ISLMM and RECO.- (U) (\$0.200) Integrated Logistics Support - Began ILS tasks for ISLMM related to reliability, maintainability, and sustainability.Test and Evaluation- (U) (\$0.327) Development Test and Evaluation - Began development of ISLMM and RECO test program.Support- (U) (\$0.437) Program Management Support <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none">Product Development- (U) (\$0.853) Primary Hardware - Complete design and development of one-way RECO capability; fabricate EDMs .Development Support Equipment- (U) (\$0.237) Software Development - Complete tactical software development for RECO.- (U) (\$0.037) Integrated Logistics Support - Complete ILS tasks for RECO related to reliability, maintainability, and sustainability.Test and Evaluation- (U) (\$0.120) Development Test and Evaluation - Complete development of RECO test program.Support- (U) (\$0.379) Program Management Support- (U) (\$0.009) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>3. (U) FY 2002 PLAN: N/A</p>		

R-1 SHOPPING LIST - Item No. 128

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 6)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001																																																																																
APPROPRIATION/BUDGET ACTIVITY RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY/BA 5						R-1 ITEM NOMENCLATURE Mine Development/0604601N																																																																																	
<p>B. Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">FY 2000</th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget:</td> <td style="text-align: center;">3.297</td> <td style="text-align: center;">1.968</td> <td style="text-align: center;">3.019</td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: center;">3.315</td> <td style="text-align: center;">1968</td> <td></td> </tr> <tr> <td>Adjustment to FY 2000/2001 Appropriated Value/</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY 2001 President's Budget:</td> <td style="text-align: center;">(0.039)</td> <td style="text-align: center;">(0.333)</td> <td style="text-align: center;">(3.019)</td> </tr> <tr> <td>FY 2002 PRES Budget Submit:</td> <td style="text-align: center;">3.276</td> <td style="text-align: center;">1.635</td> <td style="text-align: center;">0</td> </tr> </tbody> </table> <p>Funding: FY2000: General reduction of \$-0.039K; FY 2001: Removal of additional RECO funding \$-0.315K and General reduction of \$-0.014K, Gov't rescission \$-0.004K; and FY2002 and FY 2003 decrease is a result of POM 02 SPP decision to terminate ISLMM program due to lack of RAN participation.</p> <p>C. Other Program Funding Summary : (\$ in Millions)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: center;"><u>FY 2003</u></th> <th style="text-align: center;"><u>FY 2004</u></th> <th style="text-align: center;"><u>FY 2005</u></th> <th style="text-align: center;"><u>FY 2006</u></th> <th style="text-align: center;"><u>FY 2007</u></th> <th style="text-align: center;"><u>To Complete</u></th> <th style="text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>ISLMM</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td></td> <td></td> <td></td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>WPN BLI 322100</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Related RDT&E:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Royal Australian Navy</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td></td> <td></td> <td></td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> </tbody> </table> <p>D. Acquisition Strategy:</p> <p>The USN and RAN were cooperatively designing ISLMM. The US Navy was contracted with qualified contractors to manufacture the components for the kits to make the EDMs. NUWC Keyport, the USN depot for the MK48, assembled the ISLMMs/EDMs for All up Round (AUR) testing. Using existing hardware to the greatest extent possible, NSWC CSS Panama City FL is teamed with other Navy laboratories and hardware contractors to design and develop the RECO. When ISLMM was added in POM 00, N852 directed that existing funds be used, therefore other Mine Improvement efforts were placed on hold. With the termination of ISLMM, those mine improvement efforts have been resumed in FY 01.</p>										FY 2000	FY 2001	FY 2002	FY 2001 President's Budget:	3.297	1.968	3.019	Appropriated Value:	3.315	1968		Adjustment to FY 2000/2001 Appropriated Value/				FY 2001 President's Budget:	(0.039)	(0.333)	(3.019)	FY 2002 PRES Budget Submit:	3.276	1.635	0		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>	ISLMM	0.000	0.000	0.000				0.000	0.000	0.000	0.000	WPN BLI 322100											Related RDT&E:											Royal Australian Navy	0.000	0.000	0.000				0.000	0.000	0.000	0.000
	FY 2000	FY 2001	FY 2002																																																																																				
FY 2001 President's Budget:	3.297	1.968	3.019																																																																																				
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ISLMM	0.000	0.000	0.000				0.000	0.000	0.000	0.000																																																																													
WPN BLI 322100																																																																																							
Related RDT&E:																																																																																							
Royal Australian Navy	0.000	0.000	0.000				0.000	0.000	0.000	0.000																																																																													

R-1 SHOPPING LIST - Item No. 128

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 3 of 6)

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EXHIBIT R-2, RDT&E Budget Item Justification	DATE: June 2001
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APPROPRIATION/BUDGET ACTIVITY RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY/BA 5	R-1 ITEM NOMENCLATURE Mine Development/0604601N
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E. Schedule Profile

RECO PROGRAM SCHEDULE

	FY 2000				FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006				FY 2007			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Events																																
Design/Development																																
Build EDMs																																
Engineering Testing																																

R-1 SHOPPING LIST - Item No. 128

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 4 of 6)

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			MINE DEVELOPMENT/0604601N			MINE DEVELOPMENT/Q0267						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	RCP	NSWC, CSS-Panama City FL	105.585	0.908	11/99	0.853	11/00	0.000		0.000	107.346	
Ancillary Hardware Development			2.158								2.158	
Systems Engineering	WR	NSWC, CSS-Panama City FL		1.057	12/99			0.000		0.000	1.057	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees			4.790							0.000	4.790	
Subtotal Product Development			112.533	1.965		0.853		0.000		0.000	115.351	
Remarks:												
Development Support Equipment												
Software Development	WR	NSWC, CSS-Panama City, FL	2.307	0.347	12/99	0.237	12/00				2.891	N/A
Training Development											0.000	
Integrated Logistics Support	WR	NSWC, CSS-Panama City, FL		0.200	12/99	0.037	12/00				0.237	N/A
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			2.307	0.547		0.274		0.000		0.000	3.128	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 128

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER							
RDT&E, N/BA-5			MINE DEVELOPMENT/0604601N			MINE DEVELOPMENT/Q0267							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation	WR	NSWC, CSS-Panama City, FL	15.386	0.327	12/99	0.120	12/00	0.000		0.000	15.833	N/A	
Operational Test & Evaluation													
Tooling													
GFE													
Subtotal T&E			15.386	0.327		0.120		0.000		0.000	15.833	N/A	
Remarks:													
Contractor Engineering Support													
Government Engineering Support			35.599								35.599		
Program Management Support	Var.	Various	0.015	0.437	12/99	0.388	12/00				0.840	N/A	
Travel													
Labor (Research Personnel)													
Overhead													
Subtotal Management			35.614	0.437		0.388		0.000			36.439	N/A	
Remarks:													
Total Cost			165.840	3.276		1.635		0.000		0.000	170.751		
Remarks:													

R-1 SHOPPING LIST - Item No. 128

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604603N Unguided Conventional Air Launched Weapon					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	0.000	2.836	2.553	12.890							
A2183 SLAM ER	0.000	2.836	2.553	12.890							
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) A2183/STANDOFF LAND ATTACK MISSILE - EXPANDED RESPONSE (SLAM ER) Description: This program funds the development of SLAM (ER) designed to improve performance in the areas of launch and control aircraft survivability, immunity to countermeasures, probability of kill against hardened targets and improved user interfaces for both missile planning and launch aircraft integration. The SLAM ER system consists of hardware and software upgrades to the missile, software upgrades to the F/A-18 aircraft, and software upgrades to the Joint Mission Planning System (JMPS). In complying with DOD mandated requirements, Selective Availability Anti-spoofing Module (SAASM) is being incorporated into the SLAM ER weapon system.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items.</p>											

R-1 SHOPPING LIST - Item No. 129

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 6)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604603N Unguided Conventional Air Launched Weapon				PROJECT NUMBER AND NAME A2183 SLAM ER					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		2.836	2.553	12.890							
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: A2183/STANDOFF LAND ATTACK MISSILE - EXPANDED RESPONSE (SLAM ER) Description: This program funds the development of SLAM ER designed to improve performance in the areas of launch and control aircraft survivability, immunity to countermeasures, probability of kill against hardened targets and improved user interfaces for both missile planning and launch aircraft integration. The SLAM ER consists of both hardware and software upgrades to the missile. SLAM ER incorporates many non-development items i.e., the Embedded Global Positioning System/Inertial Navigation System (GPS/INS) (EGI), modified Tomahawk wings and warhead, and the existing advanced mode of the AWW-13 data link pod. The Automatic Target Acquisition (ATA) tracker is being integrated into the SLAM ER missile to enhance its capability to attack and kill in low thermal contrast, small targets in cluttered urban scenes, and in poor weather. The ATA capability will also reduce the overall number of Standoff Outside Area Defense (SOAD) missiles needed by increasing the probability of kill for part of the target set. In addition, ATA increases pilot and aircraft survivability by minimizing the time that the pilot needs to fly with his head down to control the weapon. SLAM ER (+) incorporates ATA. To accommodate future U.S. Air Force and Navy aircraft integration, SLAM ER will incorporate a MIL-STD-1760 interface. The SLAM ER Mission Planning Module (MPM) development and modifications are required to remain compatible with the changes to the Tactical Aircraft Mission Planning System (TAMPS) and to migrate to the Joint Mission Planning System. SLAM ER aircraft software integration efforts need to remain compatible with ongoing F/A-18 periodic software builds. To comply with DOD mandated requirements, Selective Availability Anit-Spoofing Module (SAASM) will be incorporated into the SLAM ER weapon system.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- FY 2000 ACCOMPLISHMENTS:
 - (U) (\$ 1.206) Completed conversion of SLAM/SLAM ER TAMPS 6.2.1 MPM development.
 - (U) (\$ 1.566) Continued Missile Flight Test and Evaluation to support TAMPS evolutionary acquisition strategy.
 - (U) (\$.064) Continued systems engineering, government and contractor support.
- FY 2001 PLANS:
 - (U) (\$ 1.934) Continued SLAM/SLAM ER TAMPS MPM, and F/A-18 MPM into planning components of the JMPS.
 - (U) (\$.554) Continue Missile Flight Test and Evaluation to support TAMPS evolutionary acquisition strategy.
 - (U) (\$.064) Continue systems engineering, government and contractor support.
 - (U) (\$.001) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.
- FY 2002 PLANS:
 - (U) (\$ 1.948) Continue conversion of SLAM/SLAM ER TAMPS MPM, and F/A-18 MPM into planning components of the JMPS.
 - (U) (\$.901) Continue Missile Flight Test and Evaluation to support TAMPS evolutionary acquisition strategy.
 - (U) (\$ 9.974) Begin SLAM-ER/SAASM Integration.
 - (U) (\$.067) Continue systems engineering, government and contractor support.

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 6)

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604603N Unguided Conventional Air Launched Weap	PROJECT NUMBER AND NAME A2183 SLAM ER

(U) B. PROGRAM CHANGE SUMMARY:

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	1.589	2.581	2.979
(U) Adjustments from the President's Budget:	1.247	-0.028	9.911
(U) FY 2002 President's Budget Submit:	2.836	2.553	12.89

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 net increase of \$1.247 million consists of a \$1.300 million increase to complete SLAM ER Operational Testing and a \$0.016 million dollar decrease is for a Small Business Innovative Research assessment and a \$0.037 million decrease for reprioritization of requirements within the Navy. The FY 2001 net decrease of \$0.028 million reflects decrease for \$0.022 million for reprioritization of requirements within the Navy and a \$0.006 million decrease for a Congressional rescission. The FY 2002 net increase of \$9.911 million reflects a \$10.000 million increase to fund the RD TEN effort to develop a SSASM module integration in SLAM ER and a decrease of \$0.038 million for economic assumptions and a decrease of \$0.053 million for a reprioritization of requirements within the Navy.

(U) Schedule: Schedule changes for ATA T&E and IOC based on delay in test asset availability test missiles planned for ATA were required to complete OT-IIB testing. Schedule change for FY01 FRP reflects shift to a calendar year (Jan-Dec) production delivery schedule following 12 month production lead time. FY02 begins SSASM integration and continued JMPS.

(U) Technical: N/A

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002
WPN BLI 223100 SLAM ER	47.148	27.603	26.174

Related RDT&E,N: Not Applicable

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Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 3 of 6)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:	June 2001
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604603N Unguided Conventional Air Launched Weapons	PROJECT NUMBER AND NAME A2183 SLAM ER	
(U) D. ACQUISITION STRATEGY: This is a non-ACAT I program with no specific acquisition strategies.			
(U) E. SCHEDULE PROFILE:			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) Program Milestones	3Q/00 IOC 3Q/00 MS III	3Q/01 ATA IOC 2Q/01 JMPS UPC Contract Award	
(U) Engineering Milestones		4Q/01 JMPS UPC Design Review	2Q/02 SAASM PDR 4Q SAASM CDR
(U) T&E Milestones	1Q/00 OTRR 1Q/00 VCD (OT-IIB) 3Q-4Q/00 DT/ATA	1Q/01 DT/ATA 1Q-2Q/01 FOT&E/ATA	
(U) Contract Milestones	2Q/00 LRIP III OPTION 3Q/00 FRP I	2Q/01 FRP II	2Q/02 FRP III 2Q/02 SAASM Contract Award 1Q/02 JMPS UPC Contract Option

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			0604603N Unguided Conventional Air Launched Weapon			A2183 SLAM ER							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date				Cost to Complete	Total Cost	Target Value of Contract
Software Development	SS/CPIF	Boeing, Mo	125.816	1.510	11/00	1.548	11/01						
Miscellaneous	Various	Various	46.226	0.424	Various	0.400	Various						
SAASM Intergration	SS/CPIF	Boeing, Mo				8.974	01/02						
Subtotal Product Development			172.042	1.934		10.922							
Remarks:													
Miscellaneous	C/FFP	Delex Corporation	1.101	0.064	8/00	0.067	8/01						
SBIR Assessment				0.001									
Subtotal Support			1.101	0.065		0.067							
Remarks:													

R-1 SHOPPING LIST - Item No. 129

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604603N Unguided Conventional Air Launched Weapon				PROJECT NUMBER AND NAME A2183 SLAM ER						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract	
Missile Flight Test & Evaluation	WX	NAWC-WD	23.965	0.554	Various	0.901	Various						
Subtotal T&E			23.965	0.554		0.901							
Remarks:													
Gov't Engineering Support (SAASM)	WX	TBD				1.000	Various						
Subtotal Management			0.000	0.000		1.000							
Remarks:													
Total Cost			197.108	2.553		12.890							
Remarks:													

R-1 SHOPPING LIST - Item No. 129

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	8.984	9.262	10.310						CONT.	CONT.
Lightweight Hybrid Torpedo / V2234 / F2234 ¹	8.984	9.262	10.310						CONT.	CONT.
Quantity of RDT&E Articles										
Note ¹ : Due to realignment of Program Executive Office, FY2000 and FY2001 funds allocated under V2234. Funds for FY2002 and beyond are allocated under F2234.										
A. (U) Mission Description and Budget Item Justification: The funding is to design, integrate and test the Lightweight Hybrid Torpedo (MK54 MOD 0). The torpedo will be comprised of hardware and software from the MK 46 Torpedo, MK50 Torpedo, and MK 48 ADCAP Torpedo. The Lightweight Hybrid Torpedo will provide performance improvements in shallow water, littoral, counter-measure filled environments. The Engineering Development Model (EDM) contract was awarded to Raytheon Systems Company (formerly Hughes Aircraft Company) in June 1996. Current contract has delivered twenty-one EDM units to support the in-water test program.										
FY 2000 ACCOMPLISHMENTS:										
- (U) (\$1.438) Continued development and production of Ancillary Hardware, including Fleet Exercise Section (FES) and Automatic Test Equipment (ATE) to support LHT										
- (U) (\$2.176) Continued development of tactical and signal processing software.										
- (U) (\$3.194) Continued simulation and in-water developmental test program.										
- (U) (\$2.176) Continued Lightweight torpedo system engineering efforts.										

R-1 SHOPPING LIST - Item No. 130-1 of 130-6

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 6)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	June 2001
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5		LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N	
FY 2001 PLAN:			
<ul style="list-style-type: none">- (U) (\$1.190) Continue development and production of Ancillary Hardware, including Fleet Exercise Section (FES) and Automatic Test Equipment (ATE) to support LHT- (U) (\$1.596) Continue development of tactical and signal processing software.- (U) (\$3.931) Continue simulation and in-water developmental test program.- (U) (\$2.157) Continue Lightweight torpedo system engineering efforts.- (U) (\$0.375) Support the LHT Command and Decision system software integration into DDG-51 class surface combatants.- (U) (\$0.013) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.			
FY 2002 PLAN:			
<ul style="list-style-type: none">- (U) (\$0.827) Continue development and production of Ancillary Hardware, including Fleet Exercise Section (FES) and Automatic Test Equipment (ATE) to support LHT- (U) (\$1.541) Continue development of tactical and signal processing software.- (U) (\$4.925) Continue simulation and in-water developmental test program.- (U) (\$2.297) Continue Lightweight torpedo system engineering efforts.- (U) (\$0.720) Support the LHT Command and Decision system software integration into DDG-51 class surface combatants.			

R-1 SHOPPING LIST - Item No.130-2 of 130-6

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 6)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification				DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			R-1 ITEM NOMENCLATURE						
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5			LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N						
B. (U) Program Change Summary	FY 2000	FY 2001	FY 2002						
(U) FY 2001 President's Budget:	9.245	9.347	8.772						
(U) Appropriated Value:	9.245	9.282							
(U) Adjustments to FY2000/2001 Appropriated Value/ FY2001 President's Budget:	-0.261	-0.085	1.538						
(U) FY 2002 PRES Budget Submit	8.984	9.262	10.310						
<p>Funding:</p> <p>FY00: Net reduction of \$0.261M is due to a \$0.018M SBIR reduction and \$0.243M USN directed general undistributed reductions.</p> <p>FY01: Net reduction of \$0.085M is due to \$0.065M Congressional directed general undistributed reduction and \$0.020M Government-Wide rescission.</p> <p>FY02: Net increase of \$1.538M accommodates technically driven cost growth and conduct TECHEVAL.</p> <p>Schedule: In-water engineering testing scheduled was delayed six months due technical issues associated with integration of Navy tactical software and contractor hardware and middleware. A MK54 MOD 0 Initial Operating Capability (IOC) is planned for FY03.</p> <p>Technical: Technical difficulties associated with the use of complex contractor hardware have led the Navy to redesign the contractor hardware and signal processing software in order to meet system performance requirements.</p>									
C. Other Program Funding Summary (\$ in millions)									
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete
Torpedo MK 46 MODS (WPN / PE 0204228N / BA3 / BLI 321500)	28.516	7.076	7.444						CONT.
AN/SQQ-89(V) Surface ASW Combat Systems (OPN / PE 0204228N / BA2 / BLI 213600)									
Fire Control System Mods for MK54	23.635	9.154	14.559						CONT.
AN/SQQ-89(V) Surface ASW Combat Systems (OPN / PE 0204228N / BA2 / BLI 213605)									
Fire Control System Mods for MK54	7.656	5.006	2.002						CONT.
D. (U) Acquisition Strategy: The EDM contract is currently held by Raytheon Systems Company (formerly Hughes Aircraft Company). The contract was awarded as a Cost-Plus-Award Fee in June 1996 and was recently converted to Cost-Plus-Incentive Fee in December 1998.									

R-1 SHOPPING LIST - Item No. 130-3 of 130-6

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 3 of 6)

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CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
		June 2001

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5	LIGHTWEIGHT TORPEDO DEVELOPMENT / 0604610N

E. Schedule Profile:

	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
Development & Upgrades Lightweight Hybrid	ENGINEERING	TESTS	TECHEVAL					

R-1 SHOPPING LIST - Item No. 130-4 of 130-6

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 4 of 6)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			0604610N			Lightweight Hybrid Torpedo / V2234/F2234						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Ancillary Hardware Development	WR	NUWC Newport/Keyport	CONT.	1.438	11/99	1.203	10/00	0.826	10/01	CONT.	CONT.	N/A
Systems Engineering	WR	NUWC Newport/Keyport	CONT.	1.204	11/99	1.517	10/00	1.702	10/01	CONT.	CONT.	N/A
Systems Engineering	WR	NAWC China Lake	CONT.	0.057	01/00	0.000		0.000		CONT.	CONT.	N/A
Systems Engineering	WR	NSWC Indian Head	CONT.	0.019	03/00	0.060		0.000		CONT.	CONT.	N/A
Systems Engineering	Various	Various	CONT.	0.275	11/99	0.425	10/00	0.720	10/00	CONT.	CONT.	N/A
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			CONT.	2.993		3.205		3.248		0.000	9.446	N/A
Development Support Equipment											0.000	
Software Development	WR	NUWC Newport	CONT.	2.176	11/99	1.596	10/00	1.541	10/01	CONT.	CONT.	N/A
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			CONT.	2.176		1.596		1.541		0.000	5.313	
Remarks:												

R-1 SHOPPING LIST - Item No. 130-5 of 130-6

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT 0604610N			PROJECT NAME AND NUMBER Lightweight Hybrid Torpedo / V2234/F2234						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
System Test & Evaluation	WR	COMOPTEVFOR	CONT.	0.066	10/99	0.068	10/00	0.100	10/01	CONT.	CONT.	N/A
	WR	NUWC Newport/Keyport	CONT.	3.091	10/99	3.738	10/00	4.825	10/01	CONT.	CONT.	N/A
	WR	NAWC Patuxent River	CONT.	0.037	12/99	0.000		0.000		CONT.	CONT.	N/A
	C,CPFF	ARL/PSU State College, PA	CONT.	0.000		0.125	01/01	0.000		0.000	CONT.	N/A
Subtotal T&E			CONT.	3.194		3.931		4.925		CONT.	CONT.	
Remarks: None.												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	Various	Various	CONT.	0.600	MISC.	0.500	MISC.	0.515	MISC.	CONT.	CONT.	
Travel			CONT.	0.021	MISC.	0.030	MISC.	0.029	MISC.	CONT.	CONT.	
Labor (Research Personnel)											0.000	
Overhead			CONT.	0.000	MISC.	0.000	MISC.	0.052	MISC.	CONT.	CONT.	
Subtotal Management			CONT.	0.621		0.530		0.596		CONT.	CONT.	
Remarks: None.												
Total Cost			CONT.	8.984		9.262		10.310		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 130-6 of 130-6

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 6)

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
APPROPRIATION/BUDGET ACTIVITY								June 2001			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE					
						0604618N; Joint Direct Attack Munition (JDAM)					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost	132.161*	10.800*	28.845**	56.285						Continuing	Continuing
A2137/Joint Direct Attack Munition (JDAM)	132.161	10.800	28.845	56.285						Continuing	Continuing
Quantity of RDT&E Articles	114		20	20						Continuing	Continuing
* Note: FY2000 and prior year funds were executed under Project Unit E2137											
**The FY 2001 budget reflects a \$3.000M Congressional add for DAMASK Component Packaging executed under A2893.											
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: JDAM is a joint acquisition program combining Department of Navy and Air Force requirements to upgrade existing General Purpose Bomb capabilities in adverse weather and at medium to high altitude releases. The upgrade is accomplished by the addition of a guidance tail kit to existing General Purpose Bombs (2000 lb and 1000lb inventory bombs). The Air Force is the executive service. The Navy's participation in JDAM involves joint development of JDAM components and support of Navy-Marine Corps unique requirements such as aircraft integration on the F/A-18. JDAM will provide an accurate (defined as not more than 13 meters) adverse weather capability. The program will incorporate commonality with the Joint Standoff Weapon where feasible. The JDAM Product Improvement Program (PIP) will field improvements for any JDAM system with initial emphasis on attaining precision (3 meters or less) accuracy through non-seeker and seeker initiatives.											
The JDAM Joint Operational Requirements Document (JORD) has recently been updated to include a requirement for a JDAM capability with the 500lb inventory bomb (MK82). The Air Force will continue to be the executive service for this effort. The Navy will participate in the joint development of the JDAM MK82 and support the Navy-Marine Corps unique requirements such as aircraft integration on the F/A-18, utilizing a smartrack for additional weapon carriage.											
114 Guided Test Vehicles (GTVs) were procured in FY96 during the Engineering and Management Development (E&MD) baseline contract. 20 GTVs will be procured in FY01 and FY02 for the MK82 development.											
(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING and MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.											

R-1 SHOPPING LIST - Item No. 131

UNCLASSIFIED

Exhibit R-2, RD TEN Budget Item Justification
(Exhibit R-2, page 1 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604618N; Joint Direct Attack Munition (JDAM)					A2137 / Joint Direct Attack Munition (JDAM)					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	*	*	**							Continuing	Continuing
RDT&E Articles Qty	114		20	20						Continuing	154

* Note: FY2000 and prior year funds were executed under Project Unit E2137

**The FY 2001 budget reflects a \$3.000M Congressional add for DAMASK Component Packaging executed under A2893.

U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: JDAM is a joint acquisition program combining Department of Navy and Air Force requirements to upgrade existing General Purpose Bomb capabilities in adverse weather and at medium to high altitude releases. The upgrade is accomplished by the addition of a guidance tail kit to existing General Purpose Bombs (2000 lb and 1000lb inventory bombs). The Air Force is the executive service. The Navy's participation in JDAM involves joint development of JDAM components and support of Navy-Marine Corps unique requirements such as aircraft integration on the F/A-18. JDAM will provide an accurate (defined as not more than 13 meters) adverse weather capability. The program will incorporate commonality with the Joint Standoff Weapon where feasible. The JDAM Product Improvement Program (PIP) will field improvements for any JDAM system with initial emphasis on attaining precision (3 meters or less) accuracy through non-seeker and seeker initiatives.

The JDAM Joint Operational Requirements Document (JORD) has recently been updated to include a requirement for a JDAM capability with the 500lb inventory bomb (MK82). The Air Force will continue to be the executive service for this effort. The Navy will participate in the joint development of the JDAM MK82 and support the Navy-Marine Corps unique requirements such as aircraft integration on the F/A-18, utilizing a smartrack for additional weapon carriage.

114 Guided Test Vehicles (GTVs) were procured in FY96 during the Engineering and Management Development (E&MD) baseline contract. 20 GTVs will be procured in FY01 and FY02 for the MK82 development.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS:

- (U) (\$ 0.276) Continued JDAM Mission Planning Module (MPM) support for the Tactical Aircraft Mission Planning System (TAMPS) and the Joint Mission Planning System (JMPS).
- (U) (\$ 3.662) Continued to perform systems engineering, ILS and program support for the JDAM 2000 lb (MK84/BLU-109) MS-III decision.
- (U) (\$ 4.097) Performed systems engineering, ILS and program support for the JDAM Product Improvement Program (PIP) concept exploration phase in preparation for the MS-I decision.
- (U) (\$ 2.765) Continued to perform systems engineering, aircraft integration, ILS, airworthiness testing, and program support for the 1000 lb (MK83) Low Rate Initial Production (LRIP) decision.

R-1 SHOPPING LIST - Item No. 131

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		June 2001
PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)		PROJECT NUMBER AND NAME A2137 / Joint Direct Attack Munition (JDAM)
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS (Continued):</p> <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none">- (U) (\$ 1.363) Continue JDAM baseline MPM support for the transition to JMPS, as well as MPM support for the JDAM MK82 .- (U) (\$ 5.428) Perform aircraft integration and Operational Flight Program (OFP) software development for the JDAM MK82 and smartrack (BRU-55).- (U) (\$ 7.326) Perform systems engineering, ILS and program support for the MK82 effort, and preparation for the JDAM PIP MS-I decision.- (U) (\$ 8.494) Perform engineering analysis, design and integration for the JDAM PIP seeker development, \$3M of which is for the DAMASK Repackaging Effort.- (U) (\$ 0.779) Complete Developmental Testing (DT) and Follow-on Operational Testing and Evaluation (FOT&E) of the MK83 JDAM.- (U) (\$ 0.559) Initiate Air Worthiness testing of the MK82 JDAM.- (U) (\$ 4.205) Procure test assets for the MK82 effort.- (U) (\$ 0.691) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68. <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none">- (U) (\$ 4.485) Continue JDAM baseline MPM support for the transition to JMPS, as well as MPM support for the JDAM MK82 and PIP effort.- (U) (\$ 16.722) Perform aircraft integration, and OFP software development for the JDAM MK82 and JDAM PIP seeker.- (U) (\$ 10.769) Perform systems engineering, ILS and program support for the MK83 MS-III decision, the MK82 effort, and the JDAM PIP seeker development program.- (U) (\$ 12.162) Continue to perform engineering analysis, design and integration for the JDAM PIP seeker development.- (U) (\$ 8.948) Complete Air Worthiness testing and initiate DT of the MK82 JDAM.- (U) (\$ 3.199) Continue to procure test assets for the MK82 effort.		

R-1 SHOPPING LIST - Item No. 131

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																												
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)	PROJECT NUMBER AND NAME A2137 / Joint Direct Attack Munition (JDAM)																													
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: right;">FY2000</th> <th style="text-align: right;">FY2001</th> <th style="text-align: right;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: right;">11.717</td> <td style="text-align: right;">26.151</td> <td style="text-align: right;">38.796</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: right;">-0.917</td> <td style="text-align: right;">2.694</td> <td style="text-align: right;">17.489</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: right;">10.800</td> <td style="text-align: right;">28.845</td> <td style="text-align: right;">56.285</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net decrease of \$ 0.917 million consists of a decrease of \$1.000 million for CAWCF loss assessment, a decrease of \$0.155 million for Small Business Innovative Research Assessment, a decrease of \$0.236 million for a reprioritization of requirements with the Navy, a decrease of \$0.046 million for a Congressional Rescission, and an increase of \$0.520 million for a FY99 funds swap that will be used for award fee. The FY 2001 net increase of \$2.694 million consist of a decrease of \$0.039 million for a reprioritization of requirements within the Navy, a decrease of \$0.204 million for a Congressional Reduction, a decrease of \$0.063 million for a government-widerescission, and an increase of \$3.000 million for DAMASK repackaging. The FY 2002 net increase of \$17.489 million consists of a decrease of \$10.000 million for aviation weapons reduction, a decrease of \$0.244 million for a reprioritization of requirements within the Navy, an increase of \$0.122 million for economic assumptions, and increase of \$27.600 million for JDAM MK82 minimunitions development .</p> <p>(U) Schedule: OT-IIB Verification of Correction of Deficiencies (VCD) completed 4Q/00 vice 2Q/00. Due to the slippage of the Pin Lock completion MS-III for the 2,000 lb variants (MK84/BLU-109) slipped from 3Q/00 to 1Q/01, IOC from 4Q/00 to 2Q/01, and the 1000 lb variant (MK83) MS-III has moved from 4Q/01 to 2Q/02. Due to the delay in starting the JDAM PIP AoA study, PIP MS-I has moved from 2Q/01 to 1Q/02. The revised JORD has resulted in the addition of the MK82 efforts to the schedule.</p> <p>(U) Technical: Not Applicable.</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: right;">FY 2000</th> <th style="text-align: right;">FY 2001</th> <th style="text-align: right;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>PAN,MC/B.A.-1 Ammunition - JDAM</td> <td style="text-align: right;">81.075</td> <td style="text-align: right;">24.166</td> <td style="text-align: right;">41.133</td> </tr> <tr> <td>RDT&E P.E. 0604618F Air Force JDAM</td> <td style="text-align: right;">11.304</td> <td style="text-align: right;">11.055</td> <td style="text-align: right;">15.656</td> </tr> </tbody> </table>					FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	11.717	26.151	38.796	(U) Adjustments from the President's Budget:	-0.917	2.694	17.489	(U) FY 2002 President's Budget Submit:	10.800	28.845	56.285	<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	PAN,MC/B.A.-1 Ammunition - JDAM	81.075	24.166	41.133	RDT&E P.E. 0604618F Air Force JDAM	11.304	11.055	15.656
	FY2000	FY2001	FY2002																												
(U) FY 2001 President's Budget:	11.717	26.151	38.796																												
(U) Adjustments from the President's Budget:	-0.917	2.694	17.489																												
(U) FY 2002 President's Budget Submit:	10.800	28.845	56.285																												
<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002																												
PAN,MC/B.A.-1 Ammunition - JDAM	81.075	24.166	41.133																												
RDT&E P.E. 0604618F Air Force JDAM	11.304	11.055	15.656																												

R-1 SHOPPING LIST - Item No. 131

UNCLASSIFIED

Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 4 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																								
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604618N; Joint Direct Attack Munition (JDAM)	PROJECT NUMBER AND NAME A2137 / Joint Direct Attack Munition (JDAM)																								
<p>(U) D. ACQUISITION STRATEGY: The Joint Direct Attack Munition (JDAM) program acquisition strategy is derived from the 1994 Federal Acquisition Streamlining Act (FASA). The focus of the program is to reduce acquisition management costs by buying bomb modification kits as if they were commercial items, including obtaining waivers to regulations that affect the efficiency of the contracting process. The JDAM contracting officer has authority to approve individual deviations from any Federal Acquisition Regulation (FAR) and Defense Acquisition Regulation Supplement (DFARS) provision not required by Statute of Executive Order for the JDAM EMD contract. The contract management philosophy includes partnering with the contractor, long term relationships with vendors, negotiations based on prices instead of costs, credit for past performance, and allowing the contractor to determine how to produce the product with the government providing only what the product must do. Cost is an independent variable. JDAM kits have a lifetime (20 year) warranty, significantly reducing Operating and Support costs.</p> <p>(U) E. SCHEDULE PROFILE: *</p> <table border="1"> <thead> <tr> <th></th> <th><u>FY 2000</u></th> <th><u>FY 2001</u></th> <th><u>FY 2002</u></th> </tr> </thead> <tbody> <tr> <td>(U) Program Milestones</td> <td></td> <td>1Q/01 MS-III MK84/BLU-109 2Q/01 IOC MK84/BLU-109</td> <td>2Q/02 MK83 MS-III</td> </tr> <tr> <td>(U) Engineering Milestones</td> <td></td> <td>3Q/01 MK82 PDR</td> <td>1Q/02 MK82 CDR</td> </tr> <tr> <td>(U) T&E Milestones</td> <td>4Q/00 OT-IIB (VCD)</td> <td>2Q/01 MK83 DT 4Q/01 MK83 FOT&E</td> <td>2Q/02 MK82 DT</td> </tr> <tr> <td>(U) Contract Milestones</td> <td></td> <td>1Q/01 MK84/BLU-109 FRP 1Q/01 MK3 LRIP</td> <td>2Q/02 MK83 FRP</td> </tr> <tr> <td>(U) Product Improvement</td> <td></td> <td>1Q/01 PIP AoA REPORT 2Q/01 MS-0 PIP</td> <td>1Q/02 MS-I PIP</td> </tr> </tbody> </table>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	(U) Program Milestones		1Q/01 MS-III MK84/BLU-109 2Q/01 IOC MK84/BLU-109	2Q/02 MK83 MS-III	(U) Engineering Milestones		3Q/01 MK82 PDR	1Q/02 MK82 CDR	(U) T&E Milestones	4Q/00 OT-IIB (VCD)	2Q/01 MK83 DT 4Q/01 MK83 FOT&E	2Q/02 MK82 DT	(U) Contract Milestones		1Q/01 MK84/BLU-109 FRP 1Q/01 MK3 LRIP	2Q/02 MK83 FRP	(U) Product Improvement		1Q/01 PIP AoA REPORT 2Q/01 MS-0 PIP	1Q/02 MS-I PIP
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>																							
(U) Program Milestones		1Q/01 MS-III MK84/BLU-109 2Q/01 IOC MK84/BLU-109	2Q/02 MK83 MS-III																							
(U) Engineering Milestones		3Q/01 MK82 PDR	1Q/02 MK82 CDR																							
(U) T&E Milestones	4Q/00 OT-IIB (VCD)	2Q/01 MK83 DT 4Q/01 MK83 FOT&E	2Q/02 MK82 DT																							
(U) Contract Milestones		1Q/01 MK84/BLU-109 FRP 1Q/01 MK3 LRIP	2Q/02 MK83 FRP																							
(U) Product Improvement		1Q/01 PIP AoA REPORT 2Q/01 MS-0 PIP	1Q/02 MS-I PIP																							

R-1 SHOPPING LIST - Item No. 131

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 5 of 7)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604618N; Joint Direct Attack Munition (JDAM)			A2137 / Joint Direct Attack Munition (JDAM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
OFP Development	WX	AWL/CL	18.261	2.000	11/00	8.225	11/01			Continuing	Continuing	
Mission Planning Development	C/CPAF	Raytheon, Tucson, AZ	6.012	0.642	11/00	3.424	11/01			Continuing	Continuing	
Aircraft Integration	SS/CPAF	Boeing	7.454	3.208	01/00	7.653	10/01			Continuing	Continuing	
PIP Development	C/CPAF	Boeing, St. Louis, MO	3.907	6.185	12/00	12.162	12/01			Continuing	Continuing	
In-House Support	WX	NAWC, CL	46.766	8.580	10/00	9.243	10/01			Continuing	Continuing	
Misc (efforts under \$1M-Aggregate)	Various	Various	4.463	0.798	11/00	1.367	11/00			Continuing	Continuing	
Award Fees	C/CPAF/M	Boeing	1.150							Continuing	Continuing	
Subtotal Product Development			88.013	21.413		42.074				Continuing	Continuing	
Remarks: Prior year funds were under Proj Unit E2137. Award Fees are associated with the procurement of test assets and were previously accounted for under Test and Evaluation.												
Travel	P.D	JDAM	1.323	0.150	10/00	0.190	10/01				1.663	
Engineering Services	Various	Various	11.210	1.017	10/00	1.575	10/01				13.802	
SBIR Assessment				0.691							0.691	
Subtotal Support			12.533	1.858		1.765					16.156	
Remarks: Prior year funds were under Proj Unit E2137.												

R-1 SHOPPING LIST - Item No. 131

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 7)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0604618N; Joint Direct Attack Munition (JDAM)			PROJECT NUMBER AND NAME A2137 / Joint Direct Attack Munition (JDAM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWC/CL	15.774	1.020	10/00	8.646	10/01			Continuing	Continuing	
Operational Test & Evaluation	PD	OPTEVFOR	3.527	0.140	10/00	0.281	02/02			Continuing	Continuing	
Test Assets	MIPR	Boeing, St Louis, MO	13.592	3.433	10/00	3.136	10/01			Continuing	Continuing	
Misc. (efforts under \$1M-Aggregate)	Various	Various	3.850	0.771	11/00	0.073	11/01			Continuing	Continuing	
Subtotal T&E			36.743	5.364		12.136				Continuing	Continuing	
Remarks: Prior year funds were under Proj Unit E2137. Previous submissions included the cost for Award Fees associated with the procurement of test assets. Award Fees are not included in Product Development.												
Misc. (efforts under \$1M-Aggregate)	Various	Various	5.672	0.210	11/00	0.310	11/01			Continuing	Continuing	
Subtotal Management			5.672	0.210		0.310				Continuing	Continuing	
Remarks: Prior year funds were under Proj Unit E2137.												
Total Cost			142.961	28.845		56.285				Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 7)

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					Joint Service Explosive Ordnance Disposal (EOD) Development/0604654N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	6.870	7.037	8.123						Cont.	Cont.
EOD Procedures/Q1829	6.870	7.037	8.123						Cont.	Cont.
Quantity of RDT&E Articles	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
A. Mission Description and Budget Item Justification: This is a Joint Service Program. CNO approved NAPDD 502-852 provides the program definition and scope of effort.										
DOD Directive 5160.62 assigned to the Secretary of the Navy (SECNAV) the responsibility of Single Manager for Explosive Ordnance Disposal (EOD) Technology and Training (T&T). It also assigns to the Executive Manager for EODT&T (N85X) the responsibility to "provide for technical development, validation, preparation, Joint Service approval, and distribution of all EOD procedures texts, graphic aids, manuals, and bulletins. This program also provides for the implementation of the DOD/DOE/FBI Memorandum of Understanding (MOU) as delineated in DOD Directive 3150.5 for response to Improvised Nuclear Devices (INDs).										
This program provides for the development of validated EOD render-safe procedures (RSPs), key identification features, and safety information used by EOD personnel in all four military services when performing their mission of rendering safe and disposing of both domestic and foreign explosive ordnance and improvised explosive devices (IEDs) that pose a threat to military operations, installations, personnel, and materials. In addition, EOD render-safe procedures for foreign ordnance must be developed as soon as possible after gaining knowledge of its existence. This effort requires exploitation and analysis of the foreign ordnance prior to development of the procedures. The program also provides for a DOD Technical Response Group with specialized tools and procedures, which may deploy with the primary EOD response element in response to IND and Weapons of Mass Destruction (WMD) incidents. This effort also provides resources necessary for the foreign threat mine acquisition/exploitation (FTMA/E) program. This effort includes acquisition, inert certification, intelligence and operational exploitation, analysis, procedure development, and disposition of the highest priority foreign threat naval mines.										
					FY 2000	FY 2001	FY 2002			
FY 2001 President's Budget:					7.094	7.102	8.092			
Appropriated Value:					7.133	7.102				
Adjustment to FY 2000/2001 Appropriated Value/										
FY 2001 President's Budget:										
a. SBIR Adjustment					-0.178					
b. General Adjustments					-0.085	-0.065	0.031			
FY 2002 PRES Budget Submit:					6.870	7.037	8.123			
Funding: FY 00 and FY 01 decreases are due to general adjustments. FY 02 increase due to minor pricing adjustments.										
Schedule: Not applicable.										
Technical: Not applicable.										

R-1 SHOPPING LIST - Item No. 132 - 1 of 132 - 5

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 5)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001													
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5							R-1 ITEM NOMENCLATURE Joint Service Explosive Ordnance Disposal (EOD) Development/0604654N													
<p>B. Other Program Funding Summary: Not applicable.</p> <table><thead><tr><th></th><th>FY 2000</th><th>FY 2001</th><th>FY 2002</th><th>FY 2003</th><th>FY 2004</th><th>FY 2005</th><th>FY 2006</th><th>FY 2007</th><th>To Complete</th><th>Total Cost</th></tr></thead></table> <p>C. Acquisition Strategy: This is a non-acquisition program.</p> <p>D. Schedule Profile: Not applicable.</p>											FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost										

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Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 5)

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CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT NAME AND NUMBER JT SVS EOD Development/0604654N				PROJECT NAME AND NUMBER Explosive Ordnance Disposal Procedures/Q1829					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	6.870	7.037	8.123							
RDT&E Articles Qty	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Continuing	Cont.

PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (\$5.051) Obtained, analyzed and exploited foreign ordnance and developed EOD render-safe procedures for new sophisticated domestic and foreign ordnance.
- (\$.885) Developed Improvised Nuclear Device (IND) countermeasures procedures and participated in exercises and joint working groups.
- (\$.934) Obtained high priority foreign sea mines for analysis and exploitation to provide for the development of MCM procedures.

2. (U) FY 2001 PLAN:

- (\$5.054) Continue to obtain, analyze and exploit foreign ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance.
- (\$.889) Continue to develop IND countermeasures procedures and participate in exercises and joint working groups.
- (\$.908) Continue to obtain high priority foreign sea mines for analysis and exploitation to provide for the development of MCM procedures.
- (\$.186) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2002 PLAN:

- (\$6.223) Continue to obtain, analyze and exploit foreign ordnance and develop EOD render-safe procedures for new sophisticated domestic and foreign ordnance.
- (\$.912) Continue to develop IND countermeasures procedures and participate in exercises and joint working groups.
- (\$.988) Continue to obtain high priority foreign sea mines for analysis and exploitation to provide for the development of MCM procedures.

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 3 of 5)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			JT SVS EOD Development/0604654N			Explosive Ordnance Disposal Procedures/Q1829						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
RSP Development	WR	EODTD, IH, MD	126.577	4.305	10/99	4.298	10/00	5.162	10/01	Continuing	Continuing	N/A
IND Countermeasures	WR	EODTD, IH, MD	22.851	0.740	10/99	0.744	10/00	0.754	10/01	Continuing	Continuing	N/A
Foreign Mine Acquisition	WR	EODTD, IH, MD	1.113	0.810	10/99	0.788	10/00	0.818	10/01	Continuing	Continuing	N/A
Program Management Personnel	WR	EODTD, IH, MD	1.165	0.165	10/99	0.165	10/00	0.175	10/01	Continuing	Continuing	N/A
Miscellaneous	Various		2.045	0.850	02/00	1.042	10/00	1.214	10/01	Continuing	Continuing	N/A
											0.000	
											0.000	
Subtotal Product Development			153.751	6.870		7.037		8.123		0.000	Continuing	N/A
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 4 of 5)

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CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			JT SVS EOD Development/0604654N			Explosive Ordnance Disposal Procedures/Q1829						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			153.751	6.870		7.037		8.123		0.000	Continuing	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 132 - 5 of 132 - 5

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 5)

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FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604710N
PROGRAM ELEMENT TITLE: Navy Energy Program

A. (U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE
R0371	Energy Conservation		
	5,236	5,480	3,157

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Develop energy-efficient systems and practices for ships, aircraft, and facilities. Resulting energy efficiency gains contribute to fleet sustainability, combat capability (e.g., greater range, time on station), and reduced operating costs. Efforts include fuel use optimization aids for aircraft; existing gas turbine engine efficiency improvements, anti-fouling paints, and air conditioning for ships; and adaptation of renewable/alternative energy technologies to Navy facility needs. Provide engineering development, and test and evaluation support to the companion PE 0603724N Project R0829.

(U) This program and the companion PE 0603724N Navy Energy Program (ADV), support the achievement of Legislated, White House, Department of Defense (DoD), and Navy Energy Management Goals. They also address direction by the Office of the Secretary of Defense, the Secretary of the Navy, and the Chief of Naval Operations to make up-front investment in technologies that reduce future cost of operation and ownership of the fleet and supporting infrastructure. Navy is TRISERVICE lead for the implementation of renewable/alternative energy systems across DoD.

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Budget Item Justification
(Exhibit R-2, page 1 of 7)

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FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program

PROJECT TITLE: Energy Conservation (ENG)

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$1,050) Aircraft: Began conversion of Flight Optimization Routines for Energy Management (FOREM) software to WINDOWS format. FOREM was certified as an alternative to the Navy Flight Manual for the purpose of flight planning for the F/A-18 and EA-6B. Extended FOREM to additional aircraft such as F/A-18E/F. Integrated FOREM software with the WINGS database format, which is more flexible and is common to the Pre-flight Planning System (PFPS) being developed by Tactical Aircraft Mission Planning System (TAMPS). Use of FOREM developed flight data by PFPS, (and vice versa) will save funds and accelerate delivery of products to the fleet. Began FOREM flight performance database development for additional aircraft as a part of the joint program with TAMPS (e.g. S-3B, E-2C, CH-53E). A website was established to disseminate FOREM information and updates.
- (U) (\$906) Ships: Completed pre-installation powering trial of DDG-51 retrofit stern flap device to reduce drag. ShipAlts for retrofit of stern flaps to DD-963, CG-47, and FFG-7 were approved. Monitored ship trials of easy release and ablative copper/cobiocide hull coatings; broadened task to include large-scale tests of copper/-cobiocide self-polishing paints; deleted from further testing those easy release and ablative copper coatings which have performed poorly. Developed shipboard Gas Turbine engine mods which reduce air leakage, and improve water wash procedures. For diesels, evaluated control system mods to manage extensive low load, low efficiency operation.

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Budget Item Justification
(Exhibit R-2, page 2 of 7)

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FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program

PROJECT TITLE: Energy Conservation (ENG)

- (U) (\$3,280) Alternative and Renewable Energy Systems: Continued support and test & evaluation (T&E) of Photo-Voltaic/Diesel hybrid power systems for off grid applications. Accelerated development of high efficiency, low emissions, power generation system. Designed/installed and initiated T&E on advanced PV module technology in grid connected application. Initiated procurement of flywheel for investigation of advanced energy storage technologies. Provided technical support for site-specific technology selection, system design and T&E support for renewable/alternative power systems as assigned DoD technical lead.
- 2. (U) FY 2001 PLAN:
 - (U) (\$1,050) Aircraft: Complete FOREM conversion to WINDOWS format (updated to WINGS database format). Extend FOREM to additional aircraft, e.g. P-3C, and AV-8B. Respond to Fleet requested enhancements of FOREM and requests for palm-tops. Provide TAMPS program with FOREM data support as requested.
 - (U) (\$1,632) Ships: Complete post-installation powering trial of DDG-51 wedge/flap, and assist development of ShipAlt. Fabricate, install, and conduct before and after powering trials of the LSD 41/49 stern flap. Monitor large-scale tests of advanced hull coatings, including self-polishing reduced copper/cobiotic products. Conduct full-scale shipboard evaluation of gas turbine on-line water-wash system. Procure, test and evaluate motion sensor lighting and remote source lighting for shipboard use.
 - (U) (\$2,723) Alternative and Renewable Energy Systems: Continue site specific design and support of PV/Diesel hybrid power systems for off-grid applications. Continue design and T&E/support of advanced PV module technology (thin film, multi-junction, integrated module/inverter, building integrated, etc) in both off grid and grid connected applications. Design, build and test prototype PV/flywheel hybrid power system to investigate advanced energy storage technologies. Investigate Power Electronics Building Blocks (PEBB) in inverters for power systems. Continue development of high efficiency, low emissions power generation system. As assigned DoD Technical lead,

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Budget Item Justification
(Exhibit R-2, page 3 of 7)

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FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program

PROJECT TITLE: Energy Conservation (ENG)

provide all services with site-specific technology selection and systems engineering support to implement zero emission, renewable/alternative power systems.

- (U) (\$75) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2002 PLAN:

- (U) (\$550) Distribute FOREM for WINDOWS to Fleet as software is completed and codes are certified. Complete FOREM development for additional aircraft such as MV-22, E-6A and KC-130.
- (U) (\$607) Ships: Complete trials of reduced copper/cobiocide and other advanced technology anti-fouling paints. T&E improved ceramic blade track for 501-K34 turbo generators; and reduced-power cooling fan for LM2500.
- (U) (\$2,000) Alternative and Renewable Energy Systems: Complete site specific design and support of PV/Diesel hybrid power systems for off grid applications, and advanced PV module technology in grid connected applications. Complete T&E of PV/flywheel hybrid power system to investigate advanced energy storage technologies. Complete evaluation of high efficiency, low emissions power generation system. As assigned DoD technical lead, provide all services with site-specific technology selection, and systems engineering support to implement zero emission, renewable/alternative power systems.

B. (U) PROGRAM CHANGE SUMMARY

	<u>FY 2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget:	5,416	5,531	5,748

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Budget Item Justification
(Exhibit R-2, page 4 of 7)

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FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program

PROJECT TITLE: Energy Conservation (ENG)

(U) Appropriated Value:

(U) Adjustments from PRESBUDG:

(U) FY 2000 SBIR Adjustment	-53		
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(U) PE Rebalance			-7
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(U) NWCF Adjustments			-41
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(U) Economic Assumptions	-21	-39	
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(U) FY 2002 PRESBUD:	5,236	5,480	3,157
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(U) CHANGE SUMMARY EXPLANATION:

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) PE 0601153N (Defense Research Sciences)

(U) PE 0603513N (Shipboard Systems Component Development)

(U) PE 0603573N (Advanced Surface Machinery Systems)

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Budget Item Justification
(Exhibit R-2, page 5 of 7)

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FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program

PROJECT TITLE: Energy Conservation (ENG)

(U) PE 0603721N (Environmental Protection)
(U) PE 0603724N (Navy Energy Program (ADV))
(U) PE 0604221N (P-3 Modernization Program)
(U) PE 0604231N (Tactical Command Systems)

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Line Item 134

UNCLASSIFIED

Budget Item Justification
(Exhibit R-2, page 6 of 7)

UNCLASSIFIED

FY 2002 RDT&E,N PROGRAM ELEMENT/PROJECT COST BREAKDOWN

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604710N

PROJECT NUMBER: R0371

PROGRAM ELEMENT TITLE: Navy Energy Program (ENG)

PROJECT TITLE: Energy Conservation (ENG)

A. (U) PROJECT COST BREAKDOWN: (\$ in thousands)

Project Cost Categories	<u>FY 2000</u>	<u>FY2001</u>	<u>FY2002</u>
Engineering Development & Testing	5,236	5,480	3,152

R-1 Line Item 134

OSD/OMB RDT&E PE/Project Cost Breakdown
(Exhibit R-3, page 7 of 7)

UNCLASSIFIED

UNCLASSIFIED
EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N
 PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Program
X2134 SHIPBOARD IW EXPLOIT	762	703	8,130							
X2135 CHBDL-ST	901	1,508							.	
Total	1,663	2,211	8,130							

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shipboard Information Warfare line includes the following programs: Cooperative Outboard Logistics Update (COBLU), Battle Group Passive Horizon Extension System (BGPHEs), Ships Signal Exploitation Equipment (SSEE) and Common Data Link - Navy (CDL-N) (formerly CHBDL). These systems provide the Battle Group with real time Indications and Warnings (I&W) by acquisition and localization of signals of interest (SOI). In addition, BGPHEs extends the Battle Group's line-of-sight radio horizon by using remote receivers in an airborne sensor payload, and sends this information via the CDL-N to the surface ships. This program funding is required to incorporate new commercial off-the-shelf (COTS) based technologies and software into the existing systems. The funding will focus on merging the current IW sensor systems into a scalable sensor package that can be tailored to different ship types and be compliant with the Maritime Cryptologic Architecture.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

UNCLASSIFIED

EXHIBIT R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

B. (U) PROGRAM CHANGE SUMMARY EXPLANATION:

(U) Funding:

FY 2000:-\$118K NSS.

FY 2001: -\$16K Section 8086 .7% Pro-Rata Reduction, -\$5 Government-Wide Rescission: PL 106-554, Sec. 14.

FY 2002: \$1,060K Shipboard IW Exploit OMN, \$1,500K Shipboard IW Exploit RDTEN, \$2,700K Maritime Cryptologic Strategy for the 21st Century, \$467K Realign from OPN to R&D, \$128K Program Support

(U) Schedule: None

(U) Technical: None

UNCLASSIFIED

EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard IW Exploit

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Program
X2134										
SHIPBOARD IW EXPLOIT	762	703	8,130							

Project X2135 has been incorporated into Project X2134 beginning in FY 02.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Shipboard Information Warfare line includes the following programs: Cooperative Outboard Logistics Update (COBLU), Battle Group Passive Horizon Extension System (BGPHERS), Ships Signal Exploitation Equipment (SSEE) and Common Data Link - Navy (CDL-N) (formerly CHBDL). These systems provide the Battle Group with real time Indications and Warnings (I&W) by acquisition and localization of signals of interest (SOI). In addition BGPHERS extends the Battle Group's line-of-sight radio horizon by using remote receivers in an airborne sensor payload, and sends this information via the CDL-N to the surface ships. This program funding is required to incorporate new commercial off-the-shelf (COTS) based technologies and software into the existing systems. The funding will focus on merging the current IW sensor systems into a scalable sensor package that can be tailored to different ship types and be compliant with the Maritime Cryptologic Architecture.

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard IW Exploit

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$422) Completed development effort to allow interoperability with USAF upgrade Prime Mission Equipment (PME).
- (U) (\$170) Completed development effort to rehost software and be IT-21 compatible (formerly TAC-N1 development)
- (U) (\$170) Completed P3I development efforts to access EP-3E Joint SIGINT Avionics Family (JSAF) Low Band Sub-System (LBSS).

2. (U) FY 2001 PLAN:

- (U) (\$543) Integrate new GCCS-M functionality into BGPHEs-ST baseline.
- (U) (\$160) Improve EP3 (air platform) interoperability.

3. (U) FY 2002 PLAN:

- (U) (\$ 710) Initiate and complete development of topside design for installation of Transportable Radio Direction Finding (TRDF) antennas on LHA-1 class ships.
- (U) (\$1,830) Initiate development of Cryptologic Unified Build (CUB) software to incorporate latest Defense Information Infrastructure Common Operating Environment (DII COE) release for interoperability of Shipboard IW programs. CUB software is utilized on all Shipboard IW programs. This development effort targets the DII COE 4.X baseline. Integrate DMS software/upgrades into CUB baseline and test.
- (U) (\$ 305) Incorporate new signal analysis tools and training aids into COBLU Phase 1 and SSEE Increment D baselines.
- (U) (\$1,830) Initiate and complete development of SSEE Increment E Engineering Development Model (EDM). Includes development and operational testing. Effort is focused on integrating state-of-the-art Electronic Support Measures/Signal Intelligence (ESM/SIGINT) attributes into current surface shipboard IW programs.
- (U) (\$510) Expand Cryptologic On-line Trainer (COLT) software for Shipboard IW programs to include expansion of existing Signals of Interest (SOI) simulations and support for Wide Area Network (WAN) training.

R-1 Shopping List - Item No. 135-4 of 135-15

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard IW Exploit

- (U) (\$1,410) Integrate new CUB/DII COE 3.X functionality into BGPHEs baseline. Continue development effort to maintain interoperability with USAF airborne Prime Mission Equipment (PME).
- (U) (\$ 515) Continue CDL-N development efforts (begun in Project X2135) for interoperability and integration with emerging Navy sensor systems such as VTUAV, F/A-18 SHARP and EP-3E Multi-int systems.
- (U) (\$ 510) Complete CDL-N development efforts for ship-to-ship data connectivity.
- (U) (\$ 510) Initiate design and development of CDL-N integrated operator station and Intelligence, Surveillance and Reconnaissance (ISR) processing systems.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY2000 Estimate	FY2001 Estimate	FY2002 Estimate	FY2003 Estimate	FY2004 Estimate	FY2005 Estimate	FY2006 Estimate	FY2007 Estimate	To Complete	Total Program
OPN Line 2360	50,325	60,464	57,535							
OPN Line 2434	35,259	0	0							
O&M,N 5C2C	4,714	8,759	9,297							

(U) RELATED RDT&E: PE 0305885G

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard I W Exploit

Cryptologic Unified Build (CUB)C. (U) ACQUISITION
STRATEGYFY2000FY2001FY 2002To Complete

Program Milestones

Engineering Milestones

Integration
Testing &
Engineering
Release CUB 4.XSystem
Requirements
Review CUB 5.XTest Readiness
Review CUB 4.XCritical Design
Review CUB 5.X

T&E Milestones

Interoperability
Certification &
Shipboard TesInteroperability
Testing, Certification
& Shipboard Test

Contract Milestones

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard I W Exploit

SSEE Increment E

C. (U) ACQUISITION
STRATEGY:

	<u>FY2000</u>	<u>FY2001</u>	<u>FY 2002</u>	<u>To Complete</u>
Program Milestones			Operational Test Readiness Review (OTRR)	Operational Assessment (LRIP) Milestone IIID
Engineering Milestones			Integration Testing and Factory Acceptance Test (FAT)	P3I development and testing
			Test Readiness Review	Preliminary Design Review (PDR)
T&E Milestones			Development Testing (DT)	Interoperability Testing
			Operational Testing (OPEVAL)	
Contract Milestones		Award Development Contract		Award Full Rate Production Contract

R-1 Shopping List - Item No. 135-7 of 135-15

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: Shipboard I W Exploit

BGPHEsFY2000FY2001FY 2002To Complete

Program Milestones

Engineering Milestones

P3I Development

T&E Milestones

-JSAF Interoperability Testing
 -T&E TAC 4
 -T&E SIGINT

Interoperability Testing
 Interoperability Testing

Interoperability Testing
 DII COE/CUB 3.X Upgrade

Interoperability Testing
 DII COE/CUB 4.X Upgrade

Contract Milestones

CDL-NFY2000FY2001FY 2002To Complete

Program Milestones

Engineering Milestones

T&E Milestones

-Complete ship to ship Inter-operability Tests
 -UAV Inter-operability Tests

-SHARP Interoperability Testing

Contract Milestones

R-1 Shopping List - Item No. 135-8 of 135-15

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard I W Exploit

Exhibit R-3 Cost Analysis (page 1)									Date: JUNE 2001			
APPROPRIATION: RDT&E,N BUDGET ACTIVITY : 5				PROGRAM ELEMENT: 0604721N					Shipboard IW Exploit X2134			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development/Integration	Various	Various	0	633	Jan 01	7,330	Dec 01			Cont.	Cont.	Cont.
Subtotal Product Development			0	633		7,330				Cont.	Cont.	Cont.
Remarks:												
Integrated Logistics Support	Various	Various	0	0		0						
Subtotal Support			0	0		0						
Remarks												
Prior year reflected in Project x2135												

UNCLASSIFIED

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System PROJECT TITLE: Shipboard I W Exploit

Exhibit R-3 Cost Analysis (page 2)								Date: JUNE 2001			
APPROPRIATION: RDT&E,N BUDGET ACTIVITY: 5				PROGRAM ELEMENT: 0604721N				Shipboard IW Exploit: X2134			

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental /Operational T&E	Various	Various	0	70	Jan 01	800	Dec 01			Cont.	Cont.	Cont.
Subtotal T&E			0	70		800				Cont.	Cont.	Cont.
Remarks												
Project Management	Various	Various	0	0		0						
Subtotal Management			0	0		0						
Remarks												
Total Cost			0	703		8,130				Cont.	Cont.	Cont.

UNCLASSIFIED

EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: CDL-N

(U) COST: (Dollars in Thousands)

PROJECT

NUMBER &

Title	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	To Complete	Total Program
X2135									
CDL-N	901	1,508	0						

Request Project Title be changed to Common Data Link - NAVY (CDL-N)

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Common Data Link-NAVY (CDL-N) (formerly CHBDL) equipment will provide a common high bandwidth data link shipboard terminal for the receipt of signal, imagery, second counter-intelligence data from remote airborne sensors and the transmission of link and sensor control data to airborne platforms. Signal intelligence data is received from the Battle Group Passive Horizon Extension System (BGPHEs) Airborne Component (AC) and delivered to the BGPHEs Shipboard Terminal. Imagery intelligence data is received from various tactical airborne reconnaissance systems and delivered to the Joint Service Imagery Processing System - Navy (JSIPS-N). Acoustic intelligence data is received from various tactical airborne reconnaissance systems and delivered to the Aircraft Carrier Tactical Support Center.

***POM 02 process transferred Project X2135 funding to Project X2134. The lines were consolidated for efficiency of management and also as a reflection of greater commonality in the systems. This latter point reflects the continuing effort to collapse "stovepipes" in order to achieve a scaleable, modular open architecture cryptologic system made up of common hardware components and running common operator interface software.**

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: CDL-N

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$141) Continued development efforts for interoperability with other emerging sensor systems.
- (U) (\$320) Continued development efforts for ship-to-ship data connectivity.
- (U) (\$100) Continued multi-queuing capability development.
- (U) (\$100) Completed development of wideband encryption (KG35)enhancements.
- (U) (\$240) Complete Test and Evaluation with other systems such as Joint Services Imagery Processing System (JSIPS) ATARS, GUARDRAIL, U-2 AIP, and HAE UAVs.

2. (U) FY 2001 PLAN:

- (U) (\$475) Continue development efforts for interoperability with other emerging sensor systems
- (U) (\$325) Continue development efforts for ship-to-ship data connectivity.
- (U) (\$708) Complete multi-queuing capability development.

B. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
OPN Line 2434	35,259	0	0	0	0	0	0	0	*	*
O&M,N	812	0	0	0	0	0	0	0	*	*

* See Project x2134.

(U) RELATED RDT&E: PE 0603261N Project A2174 Joint Service Imagery Processing Systems - Navy (JSIPS-N).

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EXHIBIT R-2a, FY 2002 RDT&E,N PROJECT JUSTIFICATION

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N
PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT NUMBER: X2135

PROJECT TITLE: CDL-N

CDL-N

FY2000

FY2001

FY 2002

3

To Complete

Program Milestones

Engineering Milestones

Complete Multi
Queuing Capability

T&E Milestones

ATARS/UAV Interoperability
Tests
AIP Interoperability
Tests

Contract Milestones

UNCLASSIFIED

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: CDL-N

Exhibit R-3 Cost Analysis (page 1)										Date: JUNE 2001		
APPROPRIATION: RDT&E,N BUDGET ACTIVITY : 5					PROGRAM ELEMENT: 0604721N					CDL-N X2135		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPFF	Loral- Salt Lake, UT	20,502	0		0				20,502	20,502	20,502
Hardware Development/Integration	Various	Various	5,057	1,358	Dec 00	0				*	*	*
Subtotal Product Development			25,559	1,358		0				*	*	*
Remarks:												
*SEE PROJECT X2134												
Integrated Logistics Support	Various	Various	254	0		0				*	*	*
Subtotal Support			254	0		0						
Remarks												
* SEE PROJECT X2134												

UNCLASSIFIED

EXHIBIT R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: JUNE 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Shipboard Information Warfare Exploit System

PROJECT TITLE: CDL-N

Exhibit R-3 Cost Analysis (page 2)									Date: JUNE 2001			
APPROPRIATION: RDT&E,N BUDGET ACTIVITY: 5				PROGRAM ELEMENT: 0604721N					CDL-N X2135			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental/Operational T&E	Various	Various	1,515	150	Dec 00	0				*	*	*
Subtotal T&E			1,515	150		0				*	*	*
Remarks												
*SEE PROJECT X2134												
Project Management	Various	Various	465	0		0				*	*	*
Subtotal Management			465	0		0						
Remarks												
* SEE PROJECT X2134												
Total Cost			27,793	1,508		0				Cont.	Cont.	Cont.

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604727N Joint Standoff Weapon System					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002							
Total PE Cost	646.151	28.920	27.694	26.852							
A2068 (formallyE2068) Joint Standoff Weapon (JSOW)	646.151	28.920	27.694	26.852							
Quantity of RDT&E Articles		3	3	19							

(Formerly managed under PEO(T) and Project Unit E2068, this program was transferred to PEO(W). Beginning with FY 01, it will be executed under Project Unit A2068.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Standoff Weapon (JSOW) is an air-to-ground weapon designed to attack a variety of targets during day, night and adverse weather conditions. JSOW will enhance aircraft survivability as compared to current interdiction weapon systems by providing the capability for launch aircraft to standoff outside the range of most target area surface-to-air threat systems. The JSOW launch-and-leave capability will allow several target kills per aircraft sortie. The JSOW program first developed a baseline weapon for use against fixed area targets. The JSOW Baseline (AGM-154A) variant includes a kinematically efficient airframe, an integrated Inertial/Global Positioning System (INS/GPS) navigation capability, and a BLU-97/B submunition payload. This weapon is designed up front for pre-planned product improvements. The JSOW/BLU-108 (AGM-154B) variant incorporates the Sensor Fuze Weapon submunition (BLU-108) into the baseline vehicle. The JSOW/BLU-108 variant will provide a standoff delivery capability against massed armor and land combat vehicles. The JSOW Unitary (AGM-154C) variant has a terminal seeker, Autonomous Target Acquisition (ATA) capability, and a unitary warhead to enable the attack of blast/fragmentation targets. The JSOW/BLU-108 MOT&E is scheduled to begin in FY03 after an 18 month LCCS ECP effort. The JSOW Unitary will provide increased accuracy and lethality and the capability for aimpoint selection. The Unitary E&MD phase of the program concludes with the completion of Operational Evaluation (OPEVAL). A Low Rate Initial Production Contract Award is planned for FY-03. Through adherence to international standards for weapons interfaces and weight and dimension considerations, JSOW will be compatible with Air Force and NATO aircraft. JSOW is a joint Navy/Air Force program.

The Unitary E&MD program phase incorporates a 500 lb class "Unitary" warhead that includes the integration of the Broach Multiple Warhead System (MWS) into the JSOW AGM-154C variant. This is an FY01 Congressionally approved New Start effort. The Broach MWS provides blast/fragmentation effects as well as enhanced penetration capability against hard point targets. The Broach MWS development and integration risk is reduced significantly by the on going Broach developmental efforts of the United Kingdom Storm Shadow Program, the JSOW Foreign Warhead Comparative Testing previously conducted, and the early provisioning for Broach in the JSOW Unitary Roadmap.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

R-1 SHOPPING LIST - Item No. 136

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <div>June 2001</div>				
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						0604727N Joint Standoff Weapon System					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002							
Total PE Cost	646.151	28.920	27.694	26.852							
A2068 (formallyE2068) Joint Standoff Weapon (JSOW)	646.151	28.920	27.694	26.852							
Quantity of RDT&E Articles		3	3	19							
(Formerly managed under PEO(T) and Project Unit E2068, this program was transferred to PEO(W). Beginning with FY 01, it will be executed under Project Unit A2068.											
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:											
<p>The Joint Standoff Weapon (JSOW) is an air-to-ground weapon designed to attack a variety of targets during day, night and adverse weather conditions. JSOW will enhance aircraft survivability as compared to current interdiction weapon systems by providing the capability for launch aircraft to standoff outside the range of most target area surface-to-air threat systems. The JSOW launch-and-leave capability will allow several target kills per aircraft sortie. The JSOW program first developed a baseline weapon for use against fixed area targets. The JSOW Baseline (AGM-154A) variant includes a kinematically efficient airframe, an integrated Inertial/Global Positioning System (INS/GPS) navigation capability, and a BLU-97/B submunition payload. This weapon is designed up front for pre-planned product improvements. The JSOW/BLU-108 (AGM-154B) variant incorporates the Sensor Fuze Weapon submunition (BLU-108) into the baseline vehicle. The JSOW/BLU-108 variant will provide a standoff delivery capability against massed armor and land combat vehicles. T JSOW Unitary (AGM-154C) variant has a terminal seeker, Autonomous Target Acquisition (ATA) capability, and a unitary warhead to enable the attack of blast/fragmentation targets. The JSOW/BLU-108 MOT&E is scheduled to begin in FY03 after an 18 month LCCS ECP effort. The JSOW Unitary will provide increased accuracy and lethality and the capability for aimpoint selection. The Unitary E&MD phase of the program concludes with the completion of Operational Evaluation (OPEVAL). A Low Rate Initial Production Contract Award is planned for FY-03. Through adherence to international standards for weapons interfaces and weight and dimension considerations, JSOW will be compatible with Air Force and NATO aircraft. JSOW is a joint Navy/Air Force program.</p>											
<p>The Unitary E&MD program phase incorporates a 500 lb class "Unitary" warhead that includes the integration of the Broach Multiple Warhead System (MWS) into the JSOW AGM-154C variant. This is an FY01 Congressionally approved New Start effort. The Broach MWS provides blast/fragmentation effects as well as enhanced penetration capability against hard point targets. The Broach MWS development and integration risk is reduced significantly by the on going Broach developmental efforts of the United Kingdom Storm Shadow Program, the JSOW Foreign Warhead Comparative Testing previously conducted, and the early provisioning for Broach in the JSOW Unitary Roadmap.</p>											

R-1 SHOPPING LIST - Item No. 136

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 2 of 7)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon System	June 2001
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <p>(U) Unitary</p> <p>(\$26.736) Continued E&MD efforts, configuration audits, and environmental testing</p> <p>(\$ 1.499) Conducted systems engineering technical efforts, mission planning system integration and contractor flight tests</p> <p>(\$.648) Began Navy DT&E planning/preparations</p> <p>(U) BLU-108</p> <p>(\$.037) Performed MOT&E planning/preparations</p> <p>2. FY 2001 PLANS:</p> <p>(U) Unitary:</p> <p>(\$18.276) Continue E&MD efforts, configuration audits and environmental testing</p> <p>(\$ 2.117) Conduct combined Development Testing and Operational Testing (DT/OT) testing</p> <p>(\$ 2.186) Continue systems engineering technical support; complete insensitive munitions qualification and system safety approvals</p> <p>(\$ 5.100) Broach Warhead development</p> <p>(U) BLU-108</p> <p>(\$.015) Performed MOT&E planning/preparations</p> <p>3. FY 2002 PLANS:</p> <p>(U) Unitary:</p> <p>(\$15.875) Continue E&MD efforts, configuration audits and environmental testing and perform Broach integration</p> <p>(\$ 6.627) Broach Warhead development</p> <p>(\$ 2.500) Conduct combined Development Testing and Operational Testing (DT/OT) testing</p> <p>(\$ 1.850) Continue systems engineering technical support; complete insensitive munitions qualification and system safety approvals</p>		

R-1 SHOPPING LIST - Item No. 136

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon (JSOW)	PROJECT NUMBER AND NAME A2068 (formally E2068) Joint Standoff Weapon (JSOW)

(U) B. PROGRAM CHANGE SUMMARY:

	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
(U) FY 2001 President's Budget Submit:	30.398	20.823	5.613
(U) Adjustments from FY 2001 President's Budget:	1.478	6.871	21.239
(U) FY 2002 President's Budget:	28.920	27.694	26.852

CHANGE SUMMARY EXPLANATION:

(U) Funding: (1) The FY 2000 decrease of \$1.478 million reflects a decrease of \$0.452 million for repriorization of requirements within the Navy and a decrease of \$1.026 million for Small Business Innovative Research assessment.

(2) The FY 2001 net increase of \$6.871 reflects an increase of \$7.093 million for JSOW Broach integration and a decrease of \$0.146 million for Congressional reduction, a decrease of \$0.045 million for a government-wide recission and a decrease of \$0.031 for repriorization of requirements within the Navy.

(3) The FY 2002 net increase of \$21.239 million reflects an increase of \$12.000 million for JSOW Broach integration, an increase of \$6.217 million for repriorization of requirements within the Navy for the Unitary program, an increase of \$3.000 million for P-3 SRP reductions, an increase of \$0.050 million for program support and a decrease of \$0.031 for Navy Working Capital Fund rates.

(U) Schedule: Unitary schedule change is due to Broach Lethal Package integration. Baseline/BLU-108 schedule change is due to Low Cost Control Section (LCCS) ECP effort.

(U) C. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
USN WP,N; BLI: 223000 JSOW			
\$s	113.798	181.778	0.000
Qtys	454	104	0

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604727N Joint Standoff Weapon (JSOW)	PROJECT NUMBER AND NAME A2068 (formallyE2068) Joint Standoff Weapon (JSOW)

(U) D. ACQUISITION STRATEGY: The contracting strategy for JSOW is planned to be sole source for the life of the program. Cost type contracts were used for the E&MD program effort. Fixed price type contracts will be used for production.

(U) E. SCHEDULE PROFILE:

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) Program Milestones			
Baseline			
BLU-108			
Unitary			
(U) Engineering Milestones			
Baseline			
BLU-108			
Unitary			
(U) T&E Milestones			
Baseline			
BLU-108			
Unitary		4Q/01 1 ST Free Flight	
		1Q/01-1Q/03	
		DT&E	
(U) Contract Milestones			
Baseline	1Q/00 FRP Option		3Q/02 FRP
BLU-108			3Q/02 LRIP
Unitary			

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 5 of 7)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE:					
APPROPRIATION/BUDGET ACTIVITY							June 2001					
RDT&E, N / BA-5			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
			0604727N Joint Standoff Weapon System			A2068 (formallyE2068) Joint Standoff Weapon (JSOW)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DEM/VAL contract	C/CPIF	Raytheon Tucson, AZ	22.101									
Pre-MS-I contract	C/CPIF	Raytheon Tucson, AZ	3.275									
Pre-E&MD contract	C/CPIF	Raytheon Tucson, AZ	3.143									
Baseline E&MD contract	C/CPIF	Raytheon Tucson, AZ	243.776									
Unitary pre-E&MD contract	SS/CPIF	Raytheon Tucson, AZ	6.316									
Unitary E&MD contract	SS/CPIF/AF	Raytheon Tucson, AZ	184.738	18.276	10/00	15.875	10/01					
Unitary E&MD contract Award Fees (Note 1)	Fee	Raytheon Tucson, AZ	7.118									
BLU-108 Pre-E&MD contract	SS/CPIF	Raytheon Tucson, AZ	0.474									
BLU-108 E&MD contract	SS/CPIF	Raytheon Tucson, AZ	10.671									
BLU-108 Smart Rack	SS/CPIF	MTechnology Horsham, PA	4.585									
F/A-18 JSOW Integration	SS/CPIF	McDonnell Douglas St. Louis, MO	16.870									
Software Integration IDIQ/TAMPS	SS/CPIF	Raytheon Tucson, AZ	2.191									
BLU-108 SFW E&MD	SS/CPIF	Textron	2.923									
SFW E7MD Award Fee (Note 2)	Award Fee	Textron	0.080									
Systems Engineering Technical Support	WX	NAWCWD China Lake, CA	103.400	1.606	10/00	1.600	10/01					
F/A-18 Integration	WX	NAWCWD China Lake, CA	15.058									
Engineering and Technical Services	Various	Various	16.900	0.300	10/00	0.150	10/01					
Miscellaneous Contracts (<\$1M)	Various	Various	6.612	0.280	10/00	0.100	10/01					
Unitary BROACH Warhead	SS/FPFF	BAE Chorley, England	0.000	5.100	05/01	6.627	10/01					
Subtotal Product Development			650.231	25.562		24.352						
Remarks:												
Note 1: Historical Unitary E&MD Award Fee information (percent awarded): Fee#1: 98.3%, Fee#2: 90.1%, Fee#3: 98.0%, Fee #4: 100%, Note 2: No historical information available; this is a one-time award fee.												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 7)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5				PROGRAM ELEMENT 0604727N JSOW			PROJECT NUMBER AND NAME A2068 (formallyE2068) Joint Standoff Weapon (JSOW)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WX	NAWCWD China Lake, CA	19.953	2.032	10/00	1.700	10/01					
Operational Test & Evaluation	WX	OPTEVFOR Norfolk, VA	4.887	0.100	10/00	0.800	10/01					
Subtotal T&E			24.840	2.132		2.500		0.000				
Remarks:												
Subtotal Management			0.000	0.000		0.000		0.000				
Remarks: There are no Support Category requirements												
Total Cost			675.071	27.694		26.852						
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 7)

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5					Ship Self Defense/0604755N					
COST (\$ in Millions	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	129.872	114.514	52.163						CONT.	CONT.
SPS Improvement Program /20166	0.453	0.000	4.910						CONT.	CONT.
5" Rolling AirFrame Missile/20167	5.689	3.734	0.000						CONT.	CONT.
NATO SeaSparrow/ 20173	13.111	9.497	0.000						CONT.	CONT.
QRCC / K2178/K2794*	26.927	45.985	44.538						CONT.	CONT.
NULKA/K2441	4.339	3.168	0.000						CONT.	CONT.
AIEWS / K2309/K2792/K2793	51.839	43.619	0.000						CONT.	CONT.
IRST/22649	11.475	8.511	2.715						CONT.	CONT.
Volume Search Radar/32735	16.039	0.000	0.000						0.000	16.085
Quantity of RDT&E Articles										
* Includes replan funding for FY02-04 (pending approval of ATR in process)										
A. Mission Description and Budget Item Justification This program element consolidates currently ongoing and planned programmatic efforts related to Ship Self Defense (SSD). The consolidation facilitates effective planning and management of these efforts, exploiting the synergistic relationship inherent in each. Analysis and demonstration have established that surface SSD based on single-sensor detection, point-to-point control architecture performs marginally against current and projected Anti-Ship Cruise Missile (ASCM) threats. The supersonic seaskimming ASCM reduces the effective battle space to the horizon and the available reaction time-line to less than 30 seconds, from first opportunity to detect until the ASCM impacts its target ship. Against such a threat, multi-sensor integration is required for effective detection; parallel processing is essential to reduce reaction time to acceptable levels and to provide vital coordination/integration of hardkill and softkill assets; and improvements in terminal gun system effectiveness and in missile kinematics, control and homing accuracy are required for a successful hardkill engagement.										

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Exhibit R-2, RDT&E Budget Item Justification
 (Exhibit R-2, page 1 of 38)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE:
		JUNE 2001
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	Ship Self Defense/0604755N	
<p>These SSD projects address and coordinate the detect, control, and engage functions necessary to meet the rigorous SSD requirements within a development structure dedicated to systems engineering through FY 2001. After FY 2001, this PE will contain those efforts related to Detect and Control Activities.</p> <p>(U) DETECTION: Improved coordinated sensor performance to increase the probability of detecting low altitude, low observable targets is to be achieved through the synergism gained from the integration of dissimilar sensor sources. Multi-sensor integration is being addressed through the efforts of Quick Reaction Combat Capability (QRCC) (K2178), while sensor improvements are addressed through the SPS Improvements (20166), Infrared Search and Track (K2442), Shipboard Electronic Warfare Improvements (K0954) and Advanced Integrated Electronic Warfare System (K2309) projects. These improvements to both active and passive detection capabilities are complementary to the ship signature reduction technology also being pursued through Shipboard EW (K0954).</p> <p>(U) CONTROL: Multi-sensor integration, parallel processing and the coordination of hardkill/softkill capabilities in an automated response to the ASCM threat are the cornerstones of Ship Self Defense System (SSDS) being developed through QRCC (K2178) efforts. In addition, that project provides for the central system engineering management of SSD developments, including efforts required to integrate SSDS with the Advanced Combat Direction System (CDS) for those ships having a CDS.</p> <p>(U) ENGAGEMENT: Through FY 2001, this PE addresses both missile and terminal gun system improvements necessary to meet their requirements are being addressed via NATO Seasparrow Missile System (NSSMS) (20173) and 5" Rolling Airframe Missile (RAM) (20167). Missile improvements are to include improved kinematic performance plus advanced seeker and low elevation fuzing/warhead capabilities. Gun system improvements address system detection, rate-of-fire, number of rounds on target, first round accuracy, and reliability and maintenance. The offboard Active Decoy (NULKA, K2190) is a joint cooperative program between the United States and Australia to develop and engage an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. The Decoy is designed to counter a wide variety of present and future radar guided Anti-Ship Missile (ASM) threats by radiating a large radar cross section signal while flying trajectory. From FY 2002 this function will transfer to PE 0604756N for RAM and NSSMS and 0604575N for AIEWS, and NULKA</p>		

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Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 38)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: JUNE 2001																									
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	R-1 ITEM NOMENCLATURE Ship Self Defense/0604755N																										
<p>B. Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 45%;"></th> <th style="width: 15%; text-align: right;">FY 2000</th> <th style="width: 15%; text-align: right;">FY 2001</th> <th style="width: 25%; text-align: right;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget Submit:</td> <td style="text-align: right;">130.470</td> <td style="text-align: right;">85.050</td> <td style="text-align: right;">60.008</td> </tr> <tr> <td>Appropriated Value:</td> <td style="text-align: right;">130.480</td> <td style="text-align: right;">87.149</td> <td></td> </tr> <tr> <td>Adjustments to FY2000/2001 Appropriated Value</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY2001 President's Budget:</td> <td style="text-align: right;">-0.320</td> <td style="text-align: right;">27.365</td> <td style="text-align: right;">-7.845</td> </tr> <tr> <td>FY 2002 President's Budget:</td> <td style="text-align: right;">130.160</td> <td style="text-align: right;">114.514</td> <td style="text-align: right;">52.163</td> </tr> </tbody> </table> <p>Funding:</p> <p>FY00: Congressional reduction for section 8055 (-\$0.464) and minor pricing adjustments (\$0.144).</p> <p>FY01: Change due to QRCC SSDS RDTEN Restructure (+\$28.164) and congressional reductions (-\$0.799)</p> <p>FY 02: Changes include transition of Proj 20167 (RAM) and Proj 20173 (NATO Seasparrow) to PE 0604756N (-15.156), transition of Prok. K2190 (NULKA) and Proj. K2309 (AIEWS) to PE 0604757N (-25.535), SPS Improvement Program's AN/SPQ-9B adjustments (+4.910), increase to QRCC SSDED REDTEN Restructure (+27.967), minor price adjustments (-0.031)</p> <p>Schedule: Not applicable.</p> <p>Technical: Not Applicable.</p>					FY 2000	FY 2001	FY 2002	FY 2001 President's Budget Submit:	130.470	85.050	60.008	Appropriated Value:	130.480	87.149		Adjustments to FY2000/2001 Appropriated Value				FY2001 President's Budget:	-0.320	27.365	-7.845	FY 2002 President's Budget:	130.160	114.514	52.163
	FY 2000	FY 2001	FY 2002																								
FY 2001 President's Budget Submit:	130.470	85.050	60.008																								
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Adjustments to FY2000/2001 Appropriated Value																											
FY2001 President's Budget:	-0.320	27.365	-7.845																								
FY 2002 President's Budget:	130.160	114.514	52.163																								

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Exhibit R-2, RDT&E Budget Item Justification

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER SPS Improvement Program/20166					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.453	0.000	4.910						Continuing	Continuing
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: This program develops and tests performance and reliability upgrades for search radar equipment to meet the evolving threat.</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS: - (U) (\$0.453) Completed Developmental/Operational Testing and made any necessary corrections to support the FY01 Milestone III production decision.</p> <p>2. (U) FY 2002 PLAN: - (U) (\$2.000) Begin AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1. - (U) (\$2.000) Complete FOT&E using Lightweight Antenna configuration on a CEC/SSDS platform. - (U) (\$0.910) Begin full integration of the AN/SPQ-9B with the MK 160 Gun Computer System.</p>										

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 38)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification						DATE: JUNE 2001																							
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER SPS Improvement Program/20166																								
<p>B. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"><thead><tr><th></th><th style="text-align: center;"><u>FY 2000</u></th><th style="text-align: center;"><u>FY2001</u></th><th style="text-align: center;"><u>FY2002</u></th><th style="text-align: center;"><u>FY 2003</u></th><th style="text-align: center;"><u>FY 2004</u></th><th style="text-align: center;"><u>FY 2005</u></th><th style="text-align: center;"><u>FY2006</u></th><th style="text-align: center;"><u>FY2007</u></th><th style="text-align: center;"><u>To Complete</u> CONT.</th><th style="text-align: center;"><u>Total Cost</u> CONT.</th></tr></thead><tbody><tr><td>OPN LINE 511000 (AN/SPQ-9B)</td><td style="text-align: center;">6.753</td><td style="text-align: center;">4.372</td><td style="text-align: center;">17.926</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> <p>C. Acquisition Strategy: AN/SPQ-9B Radar is a directed sole source contract to Northrop Grumman Norden Systems for LRIP, and upon successful completion of TECHEVAL/OPEVAL in FY01, entering into Full Rate Production.</p> <p>D. Schedule Profile: See attached.</p>									<u>FY 2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To Complete</u> CONT.	<u>Total Cost</u> CONT.	OPN LINE 511000 (AN/SPQ-9B)	6.753	4.372	17.926							
	<u>FY 2000</u>	<u>FY2001</u>	<u>FY2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To Complete</u> CONT.	<u>Total Cost</u> CONT.																			
OPN LINE 511000 (AN/SPQ-9B)	6.753	4.372	17.926																										

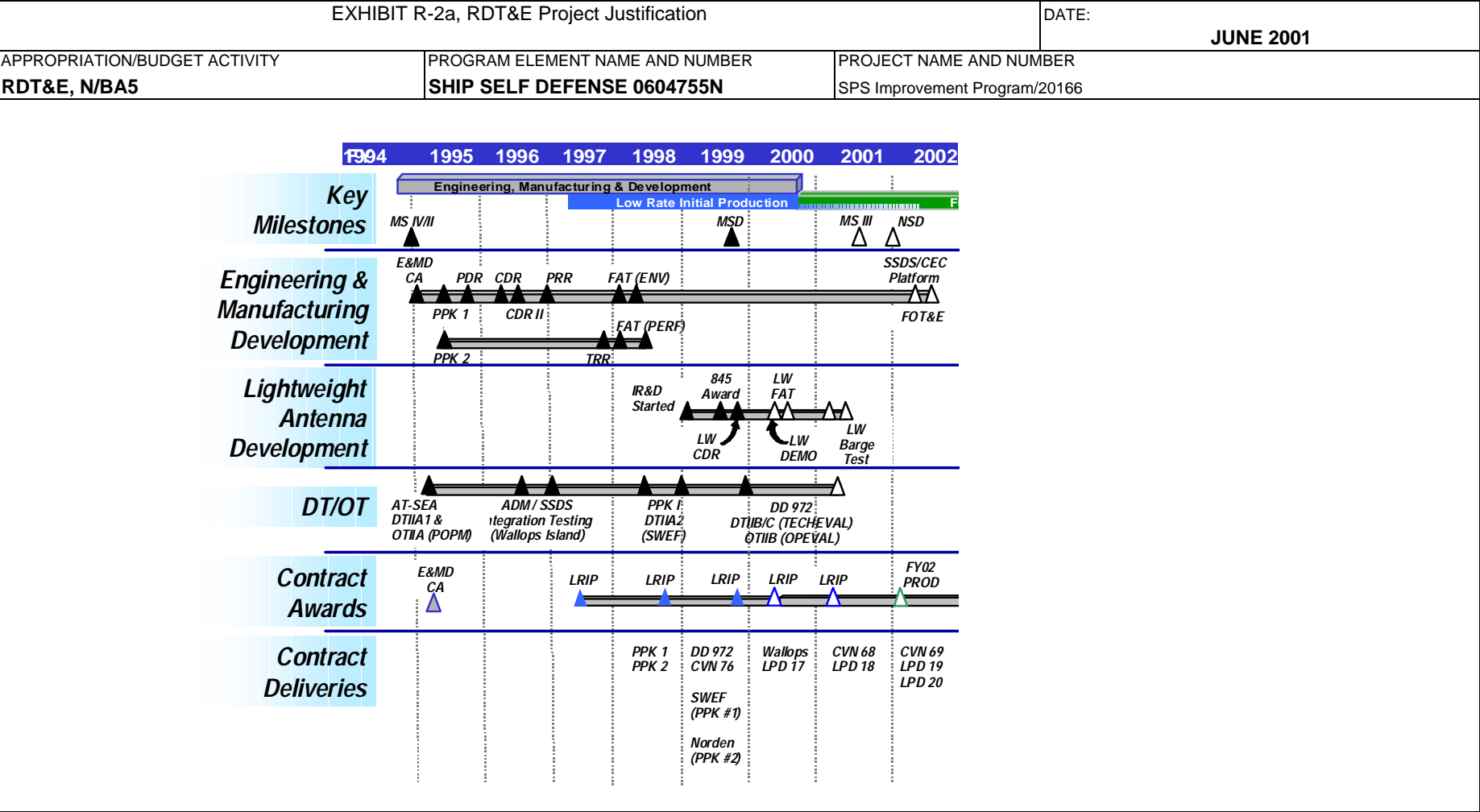
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Exhibit R-2a, RDT&E Project Justification
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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			SPS Improvement Program/20166						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF	NGNS, Melville, NY	37.440	0.304	09/00	0.000	N/A	4.910	12/00	6.012	48.666	48.666
Primary Hardware Development	FFP	*ITT/G, Van Nuys, CA	7.000	0.000	10/98	0.000	N/A	0.000	N/A	0.000	7.000	7.000
Subtotal Product Development			44.440	0.304		0.000		4.910		6.012	55.666	55.666
Remarks: *Development cost of AN/SPS-48 Transmitter.												
Development Support Equipment												
Software Development	WR	PHD NSWC, CA	5.960	0.025	10/99	0.000	N/A	0.000	N/A	0.000	5.985	5.985
Training Development		Various	2.112								2.112	2.112
Integrated Logistics Support	WR	Various	2.092	0.020	10/99	0.000	N/A	0.000	N/A	0.000	2.112	2.112
Configuration Management	PD/WR	Various	6.550	0.030	10/99	0.000	N/A	0.000	N/A	0.000	6.580	6.580
Technical Data	WR	Various	3.155	0.015	10/99	0.000	N/A	0.000	N/A	0.000	3.170	3.170
Subtotal Support			19.869	0.090		0.000		0.000		0.000	19.959	19.959
Remarks: Various Activities includes PHD NSWC, NRL, NSWC/CD, and APL												

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Exhibit R-3, RDT&E Project Justification
(Exhibit R-3, page 7 of 38)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			SPS Improvement Program/20166						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E	WR/RC	PHD NSWC, CA	1.665	0.000		0.000		0.000		0.000	1.665	1.665
DT&E	WR	NRL, Washington, DC	1.233	0.000		0.000		0.000		N/A	1.233	1.233
OT&E	WR/RC	PHD NSWC, CA	0.560	0.000		0.000		0.000		N/A	0.560	0.560
OT&E	WR	NRL, Washington, DC	0.410	0.000		0.000		0.000		N/A	0.410	0.410
Subtotal T&E			3.868	0.000		0.000		0.000		0.000	3.868	3.868
Remarks:												
Cost Categories												
MANAGEMENT												
Miscellaneous	Various	Various	2.395	0.059	11/99	0.000	01/00	0.000		0.000	2.454	2.454
Subtotal Management			2.395	0.059		0.000		0.000		0.000	2.454	2.454
Remarks:												
Total Cost			70.572	0.453		0.000		4.910		6.012	81.947	81.947
Remarks:												

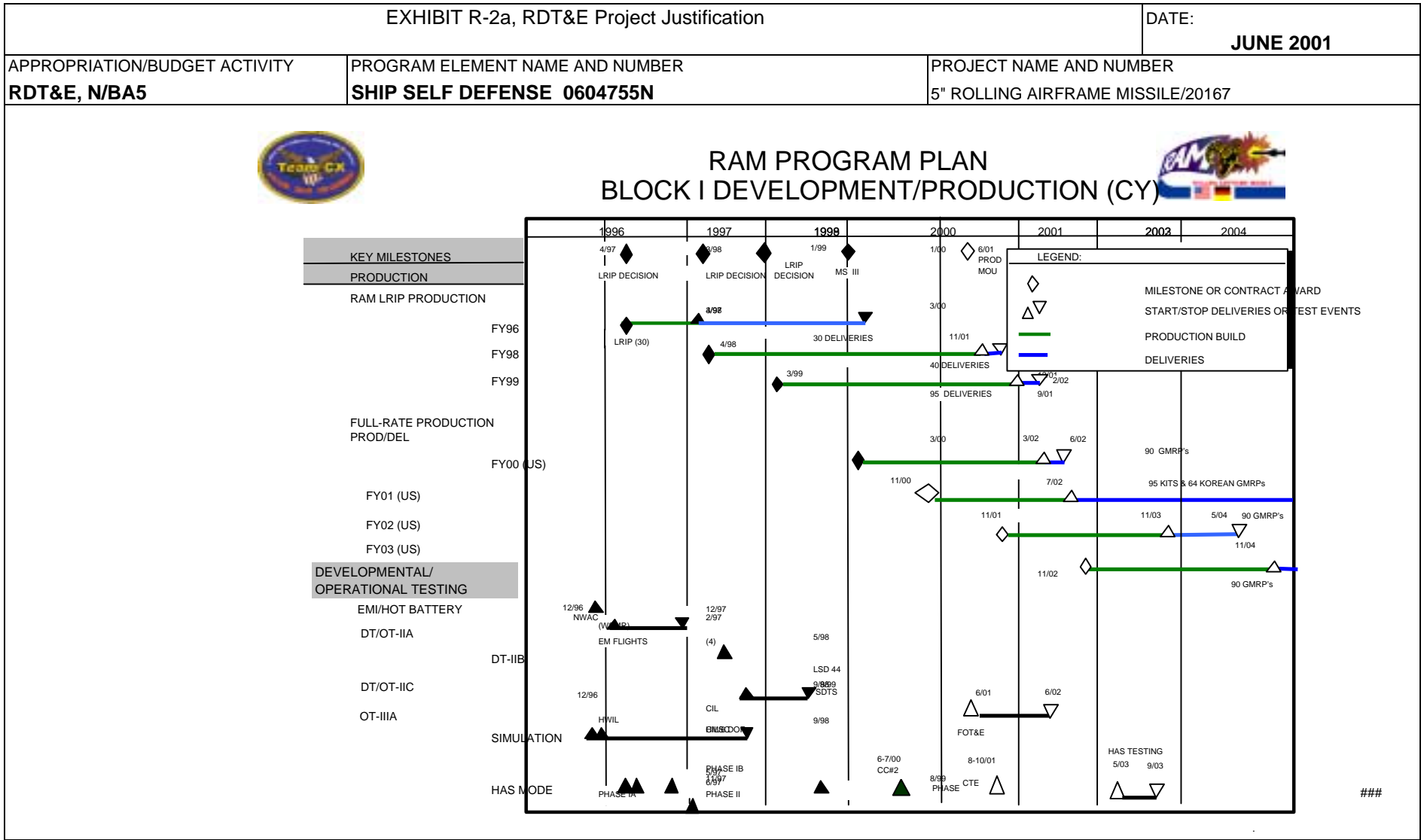
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Exhibit R-3, RDT&E Project Justification
(Exhibit R-3, page 8 of 38)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA5	SHIP SELF DEFENSE 0604755N				5" ROLLING AIRFRAME MISSILE/20167					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	5.689	3.734							Continuing	Continuing
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: The purpose of this program is to develop a surface-to-air self-defense system utilizing a dual mode, passive Radio frequency/Infared 5" Ram Rolling Airframe Missile. The baseline system (Block 0) provides a self-defense capability against active radar-guided anti-ship missiles and was developed on an equal cost share basis with the Government of the Federal Republic of Germany. The RAM Block 1 provides a capability against passive anti-ship missiles, very low altitude missiles, and maneuvering missiles through the incorporation of an infrared all-the-way mode seeker and improved fuze.</p> <p>The RAM Block 1/Helo Air Surface (HAS) upgrade program is a joint requirement of the US and Germany agreed to in a Memorandum of Understanding (MOU) signed by both parties. This effort will provide an additional capability against helicopters, aircraft and surface craft. This system is designed to counter anti-ship cruise missile raids and other threats to provide for ship survivability with accurate terminal guidance, proven lethality, and no shipboard post launch dependence. SSDS/HAS Integration and Testing will continue through FY 2007.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. (U) FY 2000 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$4.621) Refined HAS Missile Algorithms, commenced SSDS Integration, and continued Simulation Efforts and Engineering Tests. - (U) (\$.577) Tested TAS OCP upgrade. - (U) (\$.491) Corrected OPEVAL deficiencies. <p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$2.227) SSDS/HAS Software Development. - (U) (\$.476) SSDS/HAS Interface and Integration. - (U) (\$.977) Conduct Block 1 OT-III A FOT&E. - (U) (\$.054) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>3. (U) FY 2002 PLAN:</p> <p>This Project moves to PE 0604756N in FY 2002</p>										

EXHIBIT R-2a, RDT&E Project Justification								DATE: JUNE 2001																																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N						PROJECT NAME AND NUMBER 5" ROLLING AIRFRAME MISSILE/20167																																			
<p>B. Other Program Funding Summary</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:20%;"></th> <th style="width:10%;"><u>FY 2000</u></th> <th style="width:10%;"><u>FY2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY2006</u></th> <th style="width:10%;"><u>FY2007</u></th> <th style="width:10%;"><u>To</u> <u>Complete</u></th> <th style="width:10%;"><u>Total</u> <u>Cost</u></th> </tr> </thead> <tbody> <tr> <td>OPN LINE 523800 (RAM)</td> <td>37.862</td> <td>36.472</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>CONT.</td> <td>CONT.</td> </tr> <tr> <td>WPN LINE 224200 (RAM)</td> <td>43.937</td> <td>22.856</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>CONT.</td> <td>CONT.</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: SSDS/Helo/Aircraft/Surface (HAS) Integration and Testing FY 2000 - FY 2007.</p> <p>D. Schedule Profile: See attached.</p>											<u>FY 2000</u>	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>	OPN LINE 523800 (RAM)	37.862	36.472							CONT.	CONT.	WPN LINE 224200 (RAM)	43.937	22.856							CONT.	CONT.
	<u>FY 2000</u>	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>																																
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R-1 SHOPPING LIST - Item No. 137 - 11 of 38

Exhibit R-2a, RDT&E Project Justification

Exhibit R-3 Cost Analysis (page 1)										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5				PROGRAM ELEMENT SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER 5" ROLLING AIRFRAME MISSILE/20167					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware/Softwr Developmt	SS/CPFF	Raytheon Co., Tucson, AZ	59.088	0.000		0.364	11/00				CONT.	CONT.
SSDS/HAS Integration Support	SS/CPFF	JHU/APL, Laurel, MD	5.538	0.536	11/99	0.150	11/00			CONT.	CONT.	CONT.
SSDS/HAS Integration Support	SS/CPFF	Raytheon Co, San Diego, CA	0.000	1.728	03/00	0.492	11/00			CONT.	CONT.	CONT.
HAS Support	SS/CPFF	JHU/APL, Laurel, MD	0.000	0.000		0.000				CONT.	CONT.	CONT.
Miscellaneous	Various	Various	228.978	0.261	11/99	1.673	11/00			CONT.	CONT.	CONT.
Subtotal Product Development			293.604	2.525		2.679				CONT.	CONT.	CONT.
Remarks: Primary Hardware Development transitions into Test & Evaluation.												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												

Exhibit R-3 Cost Analysis (page 2)										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N				5" ROLLING AIRFRAME MISSILE/20167					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E/OT&E/FOT&E	SS/CPAF	Raytheon Co., Tucson, AZ	6.626	1.116	04/00	0.700	11/00			CONT.	CONT.	CONT.
DT&E/OT&E		China Lake, CA/PHD, CA	7.685	0.940	11/99	0.000				CONT.	CONT.	N/A
FOT&E		China Lake, CA/PHD, CA	0.000	0.000		0.250	11/00			CONT.	CONT.	N/A
Miscellaneous		Various	5.003	1.034	11/99	0.027	11/00			CONT.	CONT.	CONT.
Subtotal T&E			19.314	3.090		0.977				CONT.	CONT.	CONT.
Remarks:												
Cost Categories												
MANAGEMENT												
Miscellaneous	Various	Various	3.142	0.074	02/00	0.078	11/00			CONT.	CONT.	CONT.
Subtotal Management			3.142	0.074		0.078				CONT.	CONT.	CONT.
Remarks:												
Total Cost			316.06	5.689		3.734		4.808		Continuing	Continuing	CONT.
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N				PROJECT NAME AND NUMBER NATO SEASPARROW/20173				
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	13.111	9.497							CONT	CONT
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification: This project encompasses two (2) primary efforts to enhance ship self defense:

- (U) EVOLVED SEASPARROW MISSILE (ESSM):** A cooperative effort among 10 NATO SEASPARROW Nations, including the U.S., to improve the capability of the SEASPARROW Missile to counter the low altitude, highly maneuverable Anti-Ship Cruise Missile threat. The program consists of evolving the SEASPARROW Missile through the development of a new rocket motor with tail control; thrust vector control and ordnance (warhead) upgrade; modifications to the MK 41 VLS to fire from a single cell with 4 ESSM (QuadPack); and modifications to the NATO SEASPARROW Missile System (NSSMS) to provide ESSM capability.
- (U) NATO SEASPARROW- MK 91 Rearchitecture/SDSMS** The MK 91 Rearchitecture Program integrates NSSMS into the Ship Self Defense System (SSDS) Architecture to provide ship missile defense utilizing an open architected system. This effort consists of combining the Firing Officer Console and Radar Set Console functionality into a single Advanced Display System Console (AN/UYQ-70); modifying the Signal Data Processor and eliminating the MK 157 Computer Signal Data Converter and System Evaluation and Trainer, and redistributing this functionality within SSDS compatible microprocessors. This approach will eliminate the analog, point-to-point architecture, limited input-output channel and computer processing reserve deficiencies resident in the existing MK 57 NSSMS, and is required for ESSM. This modification also allows for full exploitation of the capabilities of the future ESSM and provides significant reductions (over 50%) in NSSMS cost of ownership and manning requirements.

Note: This Project moves to PE 0604756N in FY 2002.

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N	PROJECT NAME AND NUMBER NATO SEASPARROW/20173
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) (U) FY 2000 ACCOMPLISHMENTS</p> <p>(U) <i>ESSM</i>:</p> <p>(U) (\$9.444) Continued EMD efforts at Raytheon, including S-Band capability for AEGIS/ESSM uplink. Prepare for DT-IIC/OT-IIC on the SDTS. Conducted ESSM DT-IIA at WSMR.</p> <p>(U) (\$2.583) MK 41 QuadPack. Conducted formal testing including: Weapons control system/VLS integration with AEGIS at WSMR and LCS RegressionTest.</p> <p>(U) <i>NATO SEASPARROW</i> :</p> <p>(U) (\$1.084): Completed development of the computer program suite for the NSSMS MK 57 Mod 6 (ReArchitecture) for LHDs with AN/SWY-3. Entered CSIT for LHD 7 at ICSTF with the MK 57 Mod 6. Corrected all high priority computer program deficiencies identified as a result of LHD 7 ICSTF testing. Supported initial work up for ESSM DT-IIC/OT-IIC on SDTS.</p> <p>2. (U) FY 2001 PLAN:</p> <p>(U) <i>ESSM</i>:</p> <p>(U) (\$7.509) Continue AEGIS S Band development. Complete DT-IIC/OT-IIC, international cooperative firings. Complete DT-IIB/OT-IIB at WSMR. Upgrade configuration of EMD missile assets to support TECHEVAL/OPEVAL on AEGIS ships.</p> <p>(U) (\$1.022) MK 41 QuadPack. Complete development/testing of VLS integration</p> <p>(U) <i>NATO SEASPARROW</i>:</p> <p>(U) (\$1.966) Complete development of computer program suite for the NSSMS MK 57 Mod 7 for CVN 68 with SSDS MK 2 Mod 0. Conduct integration testing of MK 57 Mod 7 with SSDS Mk 2 Mod 0 at Wallops Island. Address any deficiencies identified as a result of CSIT testing at ICSTF, integration testing at Wallops Island.</p> <p>3. (U) FY 2002 PLAN</p> <p>Project moves to PE 0604756N in FY 2002</p>		

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001																																																										
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER					PROJECT NAME AND NUMBER																																																											
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	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>To Complete</u>	<u>Total Cost</u>																																																							
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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA-5			SHIP SELF DEFENSE 0604755N			NATO SEASPARROW/20173						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ESSM-Primary Hardware Development	LC/CPAF	HUGHES/RAYTHEON	120.687	7.049	10/99	2.561	10/00				130.297	130.297
		TDW	3.746								3.746	3.746
Ancillary Hardware Development	CPAF	LOCKHEED/UDLP	43.985	1.857	10/99	0.482	11/00				46.324	46.324
Systems Engineering	VARIOUS	VARIOUS	21.263	0.400	10/99		10/00				21.663	NA
NATO-Primary Hdwe Dev		HUGHES/RAYTHEON	29.098	0.503	10/99	1.358	11/00			CONT	CONT	
Software Development		TRACOR	2.346							CONT	CONT	
Systems Engineering		VARIOUS	4.385	0.471	10/99	0.450	10/00			CONT	CONT	
Subtotal Product Development			225.510	10.280		4.851				CONT	CONT	CONT
Remarks:												
ESSM												
Integrated Logistics Support	WR	NSWC PHD	2.818	0.250	10/99		10/00				3.068	
Engr Support	WR	VARIOUS	2.923	0.060	10/99	0.100	10/00				3.083	
NATO-MK 91/SDSMS												
ENGR SUPPORT	WR	VARIOUS	5.091	0.060	10/99	0.187	10/00			CONT	CONT	
Subtotal Support			10.832	0.370		0.287				CONT	CONT	
Remarks:												
Remarks:												

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Exhibit R-3, Project Cost Analysis

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Exhibit R-3 Cost Analysis (page 1)								DATE:									
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT				PROJECT NAME AND NUMBER				JUNE 2001	
RDT&E, N BA-5								SHIP SELF DEFENSE 0604755N				NATO SEASPARROW/20173					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract					
Developmental Test & Evaluation	WR	NAWC CL/PT Mugu	2.421			0.600	10/00				CONT						
SDTS/DT OT IIC	WR	NAWC WS	3.732	0.916	10/99	2.200	10/00				6.000						
OPEVAL/TECHEVAL	WR	VARIOUS (CORONA,APL, Dahlgren,NSWC PHD	1.050	0.300	10/99	0.421	10/00				CONT						
Subtotal T&E			7.203	1.216		3.221											
Remarks:																	
ESSM-ENGR SPT	VARIOUS	VARIOUS	4.046	0.061	10/99	0.116	10/00				CONT						
ESSM-PM SPT	VARIOUS	VARIOUS	0.471	0.027	10/99						0.498						
ESSM-LABOR	PD/WR		2.567	0.782	VARIOUS	0.782	VARIOUS				CONT						
ESSM - TRAVEL	PD/WR		0.860	0.180	VARIOUS	0.185	VARIOUS				CONT						
ESSM- MISC	VARIOUS	VARIOUS	1.880	0.145	VARIOUS	0.005	VARIOUS				CONT						
NATO TRAVEL/MISC	VARIOUS	VARIOUS	1.333	0.050	VARIOUS	0.050	VARIOUS				CONT						
Subtotal Management			11.157	1.245		1.138											
Remarks:																	
Total Cost			254.702	13.111		9.497				CONT	CONT						
Remarks: The Firings of the ESSM aboard the Self Defense Test Ship in FY 02 are critical for the qualification and acceptance testing in a shipboard enviroment. The TECHEVAL /OPEVAL will provide the first guided intercept from a AEGIS Platform to Test Out the Weapon System and obtain Milestone III for the ESSM Full Rate Production.																	

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Exhibit R-3, Project Cost Analysis

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N				PROJECT NAME AND NUMBER Quick Reaction Combat Capability / K2178					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	26.927	45.985	44.538						0.000	360.696
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification</p> <p>The Quick Reaction Combat Capability (QRCC) project implements an evolutionary acquisition of improved ship self defense capabilities against Anti-Ship Cruise Missiles (ASCMs) for selected ships. The Ship Self Defense System (SSDS) is the integrating element of QRCC. The design integrates several existing stand-alone Anti-Air Warfare systems that do not individually provide the complete detection, control, and engagement capabilities needed against low flying, high speed ASCMs with low radar cross sections. The SSDS integration concept fulfills the need for an automated detection, quick reaction and multi-target engagement capability emphasizing performance in the littoral environment. SSDS replaces manual control of several self-defense systems with a single integrated capability under the computer-aided control of ship operators. System design emphasizes use of non-developmental items, commercial standards, Next Generation Computer Resources, computer program reuse and open architecture. SSDS is a physically distributed, open architecture computer network consisting of commercially available or previously developed hardware. It includes a command table that uses components of the Navy's AN/UYQ-70 standard display for human-machine interface, commercially available local area network access units and circuit cards, and commercially available fiberoptic cabling.</p> <p>SSDS MK1 integrates the SPS-49A(V)1 radar, SPS-67(V)1 radar, AN/SLQ-32A electronic countermeasures system, Combat Identification, Friend or Foe-Self Defense (CIFF-SD), Rolling Airframe Missile and Phalanx Close-In Weapon System and is being installed on LSD41/49 class ships. SSDS MK1 successfully completed Operational Evaluation in June 1997. SSDS received Milestone III Approval for Full Rate Production (Mar 98) and authority to to integrate with ACDS and CEC on CV(N), LPD-17, LHD and LHA ship classes.</p> <p>SSDS MK2 facilitates the incremental evolution and implementation of follow-on modifications. Development of SSDS MK2 consists of leveraging critical experiments and re-use of technology and software. SSDS MK2 is in development and will integrate other ship self defense elements, such as the AN/SPQ-9B radar, and NATO Sea-sparrow missile system with the Cooperative Engagement Capability (CEC) to improve joint interoperability. SSDS MK2 provides enhanced capabilities for Force Protection against air, surface, and subsurface threats using both ownship and remote data in support of the AAW Capstone Requirements. SSDS MK2 will also incorporate selected features of the Advanced Combat Direction System to become the integrated, coherent real time Command and Control System for Aircraft Carriers and Amphibious ships. It will: increase operational capabilities; improve combat readiness and Battle Group Interoperability; and promote standardization. It will also introduce new shipboard tactical displays and support equipment, as well as, implement interfaces common with those used by AEGIS to facilitate transition to Common Command and Decision.</p> <p>* The FY 2001 amount includes a pending Above Threshold Reprogramming action for \$28.164M.</p>										

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N	PROJECT NAME AND NUMBER Quick Reaction Combat Capability / K2178

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 Accomplishments:

- (U) (\$14.159) Continued computer program coding and began SSDS MK 2 Mod 1/2 unit testing and multi-element integration testing.
- (U) (\$ 3.723) Activated Ship System Engineering Center (SSEC) Wallops Island on SSDS MK2 corrections on activation / test equipment requirements.
- (U) (\$.513) Prepared Integrated Logistics Support (ILS) planning and documentation updates for SSDS MK2.
- (U) (\$.500) Developed System Segment Specification (SSS) and Performance and Compatibility Requirements (P&CR) for LHD ship class.
- (U) (\$ 8.032) Continued development integration and testing of SSDS MK2 Mod 0 for CVN 68, USS NIMITZ, deployment.

3. FY 2001 Plan:

- (U) (\$30.263) Continue SSDS MK 2 Mod 1/2 computer program coding, unit testing and multi-element integration testing. (\$15.800 of ATR)
- (U) (\$5.126) Conduct developmental testing as SSEC Wallops Island and modify software as required. (\$5,126 of ATR)
- (U) (\$3.000) Complete development integration and begin test of SSDS MK 2 Mod 0 efforts and deliver to CVN 68, USS NIMITZ.
- (U) (\$.614) Continue documentation updates, training curriculum updates and ILS planning. (\$.614 of ATR)
- (U) (\$1.616) Begin systems engineering for LHD unique integration efforts with SSDS MK 2. (\$1.616 of ATR)
- (U) (\$5.000) Apply Labor Rate Adjustment on the development, integration and delivery Raytheon contract. (\$5.000 of ATR)
- (U) (\$0.366) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

4. FY 2002 Plan:

- (U) (\$25.838) Complete computer program coding, unit testing and multi-element integration testing.
- (U) (\$ 2.000) Begin computer program development for unique LHD integration efforts.
- (U) (\$ 5.000) Post test analysis and computer program correction
- (U) (\$ 5.000) DT/DEP testing at SSEC Wallops Island
- (U) (\$ 5.700) Apply remaining Labor Rate Adjustment on the development, integration and delivery Raytheon contract.
- (U) (\$ 1.000) Complete Developmental Test and Operational Test on SSDS MK 2 Mod 0 configuration.

R-1 SHOPPING LIST - Item No. 137 - 20 of 137 - 38

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification						DATE: JUNE 2001																																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N				PROJECT NAME AND NUMBER Quick Reaction Combat Capability / K2178																																																	
<p>B. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 8%;">FY 2000</th> <th style="width: 8%;">FY 2001</th> <th style="width: 8%;">FY 2002</th> <th style="width: 8%;">FY 2003</th> <th style="width: 8%;">FY 2004</th> <th style="width: 8%;">FY 2005</th> <th style="width: 8%;">FY 2006</th> <th style="width: 8%;">FY 2007</th> <th style="width: 10%; text-align: center;"><u>To Complete</u></th> <th style="width: 10%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>QRCC / K2178 OPN 523900, 523905, 523906</td> <td style="text-align: right;">37.337</td> <td style="text-align: right;">9.267</td> <td style="text-align: right;">34.378</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">582.315</td> </tr> <tr> <td>O&MN 14D30 WPN Maint. QRCC</td> <td style="text-align: right;">8.825</td> <td style="text-align: right;">7.728</td> <td style="text-align: right;">10.245</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> <tr> <td>SCN LPD ship class</td> <td style="text-align: right;">42.000</td> <td style="text-align: right;">0</td> <td style="text-align: right;">44.298</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">0</td> <td style="text-align: right;">86.298</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Related RDT&E: PE 0604518N (Advanced Combat Direction System Blk 1) PE 0603658N (Cooperative Engagement Capability)</p> <p>C. Acquisition Strategy: Four SSDS systems were procured with OP,N for LSD class ships and a shore site in FY 99. LSD class procurement will be completed in FY 00 with the procurement of two systems. These systems will be procured under a Firm Fix Price Contract. The FY00 requirements also include CVN 68 and 1 shore based trainer. The first SSDS MK 2 system procurements took place under a Cost Plus Award Fee contract in FY99 for the CVN 76, LPD 17, LPD 18 and CVN 69. Follow-on procurements for additional ships of the CV(N), LPD and LHD classes will be made using FFP contracts.</p>												FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	<u>To Complete</u>	<u>Total Cost</u>	QRCC / K2178 OPN 523900, 523905, 523906	37.337	9.267	34.378							582.315	O&MN 14D30 WPN Maint. QRCC	8.825	7.728	10.245						CONT.	CONT.	SCN LPD ship class	42.000	0	44.298						0	86.298
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	<u>To Complete</u>	<u>Total Cost</u>																																												
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R-1 SHOPPING LIST - Item No. 137 - 21 of 137- 38

Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

JUNE 2001

APPROPRIATION/BUDGET ACTIVITY

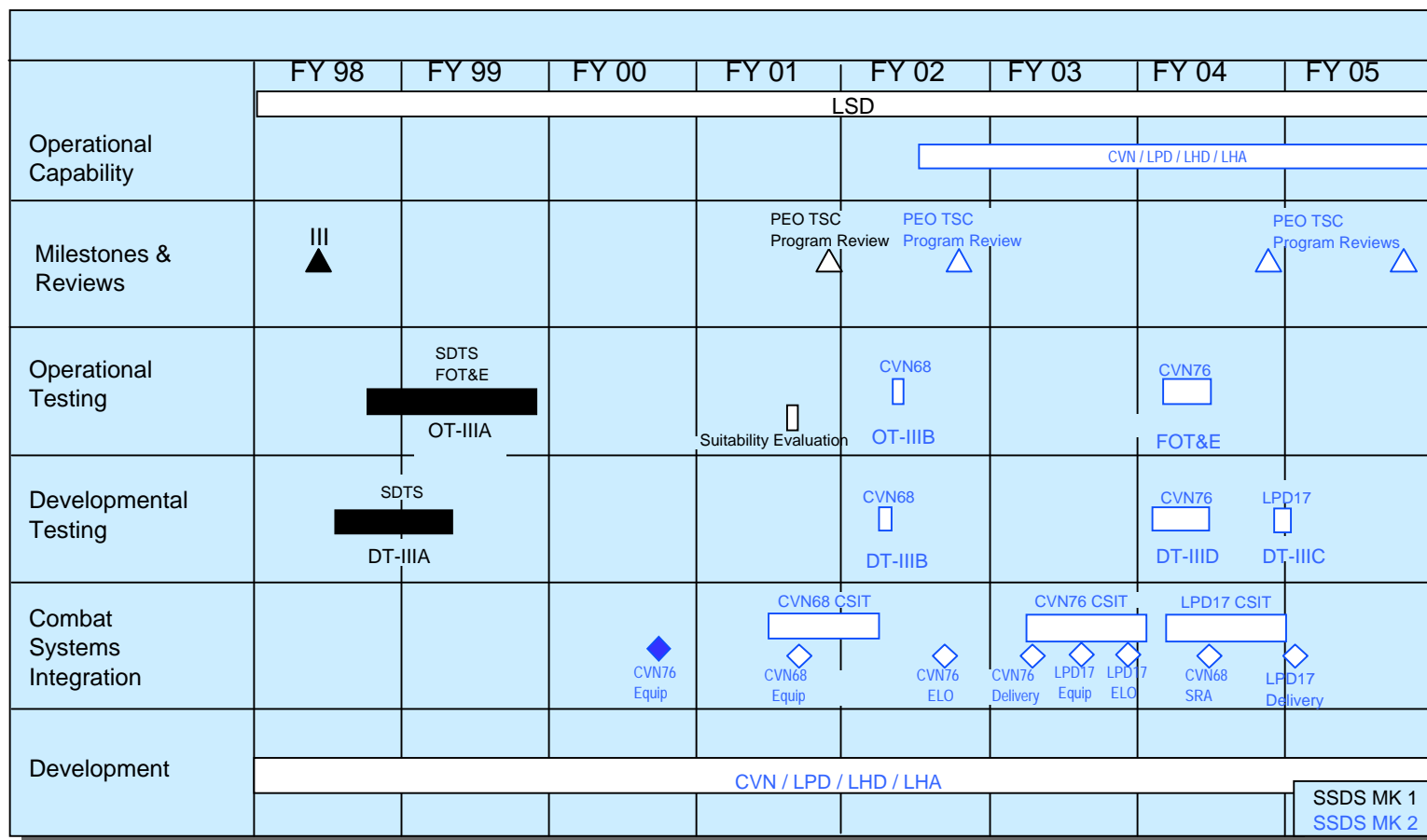
PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N/BA5**SHIP SELF DEFENSE 0604755N**

Quick Reaction Combat Capability / K2178

D. Schedule Profile:



R-1 SHOPPING LIST - Item No. 137 - 22 of 137 - 38

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
QRCC / K2178	WR	NSWC/DD-Dahlgren, VA	14.326	0.797	11/99	0.000	10/00	0.892	10/01	0.000	16.015	N/A
Systems Engineering	SS/FP	JHU/APL-Laurel, MD	22.727	2.299	01/00	0.000	11/00	0.950	11/01	0.000	25.976	N/A
Systems Engineering	WR	NSWC/PHD-Pt Hueneme,CA	5.311	1.184	11/99	0.000	N/A	0.500	N/A	0.000	6.995	N/A
Product Development	SS/CPAF	RSC(5108)-San Diego, CA	7.637	13.567	06/00	36.297	10/00	26.879	10/01	37.966	122.346	122.346
Systems Engineering	SS/CPAF	RSC(5466)- San Diego, CA	20.353	0.000	10/99	0.000	N/A	0.000	N/A	0.000	20.353	20.353
Award Fees	SS/CPAF	RSC(5108)-San Diego, CA	0.950	1.841	09/00	3.970	3/01&9/01	4.167	3/01&9/01	5.610	16.538	N/A
Award Fees	SS/CPAF	RSC(5466)- San Diego, CA	2.163	0.000	10/99	0.000	N/A	0.000	N/A	0.000	2.163	N/A
Risk Reduction / EMD	Various	Various	76.366	0.000	N/A	0.000	N/A	0.000	N/A	0.000	76.366	76.366
Subtotal Product Development			149.833	19.688		40.267		33.388		43.576	286.752	219.065
Remarks: Risk reduction and Engineering Manufacturing Development was done primarily by Hughes. FY 01 includes ATR in the amount of \$25.446. RSC contract N00024-99-C-5108 modification for development re-plan is in process.												
QA / RMA												
Systems Engineering	WR	NWAS Corona	8.045	0.246	11/99	0.100	10/00	0.200	10/01	0.600	9.191	
Subtotal Support			8.045	0.246		0.100		0.200		0.600	9.191	
Remarks: FY 01 includes ATR in the amount of \$.100.												

R-1 SHOPPING LIST - Item No. 137 - 23 of 137 - 38

Exhibit R-3, Project Cost Analysis

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Exhibit R-3 Cost Analysis (page 2)									DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
QRCC / K2178	WR	NSWC/PHD-Pt Hueneme CA	19.840	2.197	11/99	1.996	10/00	4.250	10/01	0.000	28.283	N/A
Developmental Test & Evaluation	WR	NSWC DD, Wallops Island	8.779	3.723	11/99	2.050	10/00	5.000	N/A	6.000	25.552	N/A
Developmental Test & Evaluation	SS/FP	JHU/APL- Laurel, MD	0.618	0.000	11/99	0.482	10/00	0.500	N/A	0.000	1.600	N/A
Developmental Test & Evaluation	WR	OPTEVFOR	0.533	0.149	11/99	0.150	10/00	0.250	10/01	0.000	1.082	N/A
Subtotal T&E			29.770	6.069		4.678		10.000		6.000	56.517	N/A
Remarks: FY 01 includes ATR in the amount of \$1.678.												
Program Management support												
Program Management support			4.752	0.924	N/A	0.940	N/A	0.950	N/A	0.670	8.236	N/A
Subtotal Management			4.752	0.924		0.940		0.950		0.670	8.236	N/A
Remarks: FY 01 includes ATR in the amount of \$.940. Program management support includes travel and support services.												
Total Cost			192.400	26.927	N/A	45.985	N/A	44.538	N/A	50.846	360.696	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 137 - 24 of 137 - 38

Exhibit R-3, Project Cost Analysis

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER NULKA DECOY/K2190/K2441					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	4.339	3.168							CONTINUING	CONTINUING
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification
The Offboard Active Decoy (NULKA) is a joint cooperative program between the United States and Australia that developed an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. NULKA is designed to counter a wide variety of present and future radar guided Anti-Ship Missiles (ASM) by radiating a large radar cross section while flying a ship-like trajectory. The United States developed the electronic payload and fire control system, while Australia developed the hovering rocket. Currently the United States is completing efforts to integrate with Ship Self Defense System (SSDS), maintain Electromagnetic Compatibility (EMC) with shipboard emitters, and integration with the Advanced Integrated Electronic Warfare System (AIEWS). In order to maintain our effectiveness in countering both current and evolving threats, it is critical to maintain a continuous RDT&E budget for payload modifications and testing. This will ensure we provide the fleet with a proven and effective capability that they can have complete confidence in when called on to go in harms way.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- (U) FY 2000 Accomplishments:
 - (U) (\$4.339) Completed update of system software that programs the aerodynamic response of the NULKA decoy to specific threats when launched from specific ship classes (based on OPEVAL results); conducted at sea testing of the NULKA system in the SPY-1 AEGIS radar environment aboard a cruiser; developed a technical requirements specification for a dual band, spatially distributed IR decoy; and continued AIEWS integration.
- (U) FY 2001 Plan:
 - (U) (\$3.122) Complete AIEWS integration. Prepare detailed specification for an infra-red (IR) material payload and dispensing mechanism.
 - (U) (\$0.046) Portion of extramural programs reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.
- (U) FY 2002 Plan:
 - This project moves to PE 0604757N in FY 2002

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EXHIBIT R-2a, RDT&E Project Justification						DATE: JUNE 2001																							
APPROPRIATION/BUDGET ACTIVITY RDTE, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER NULKA Decoy/K2190/K2441																								
<p>B. (U) Program Change Summary: (OPN Line 553000)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">FY 2000</th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> <th style="text-align: center;">FY 2006</th> <th style="text-align: center;">FY 2007</th> <th style="text-align: center;">To Complete</th> <th style="text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>Anti-Ship Missile Decoy System</td> <td style="text-align: center;">32.101</td> <td style="text-align: center;">37.765</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">CONT.</td> <td style="text-align: center;">CONT.</td> </tr> </tbody> </table> <p>C. (U) Acquisition Strategy: N/A</p> <p>D. (U) Schedule Profile: See Attached.</p>									FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	Anti-Ship Missile Decoy System	32.101	37.765							CONT.	CONT.
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost																			
Anti-Ship Missile Decoy System	32.101	37.765							CONT.	CONT.																			

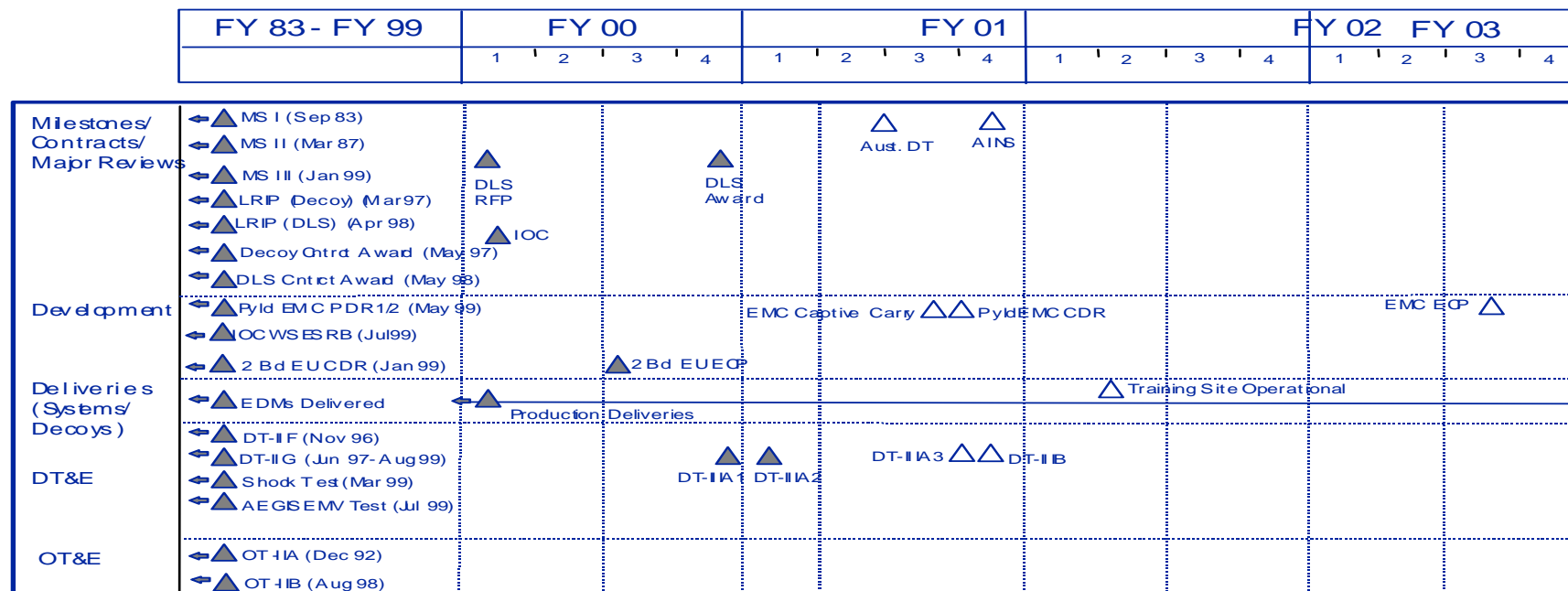
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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N	PROJECT NAME AND NUMBER NULKA Decoy/K2190/K2441

OVERALL NULKA/MK 53 DLS SCHEDULE



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Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			NULKA Decoy/K2190/K2441						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	WR	NSWC Crane, IN	2.250	0.588	03/00	0.417	10/00			CONT.	CONT.	N/A
	WR	NSWC Indian Head, MD	2.047								2.047	N/A
	WR	NSWC Dahlgren, VA	4.723	0.756	03/00	0.439	10/00			CONT.	CONT.	N/A
	WR	NSWC Port Hueneme, CA	0.908								0.908	N/A
	WR	NRL Washington, DC	2.673	1.050	03/00	0.400					4.123	N/A
	SS/CPFF	Sippican Boston, MA	3.592								3.592	3.592
	SS/CPFF	BAeA, Australia	5.440	0.513	03/00						5.953	5.953
	SS/CPFF	TBD	0.000			1.493						
	PD	NAVSUP Washington, DC	2.400								2.400	2.400
Subtotal Product Development			24.033	2.907		2.749				CONT.	CONT.	CONT.
Remarks:												
Support and Management	CC/CPFF	Anteon Arlington, VA	0.806	0.195	03/00	0.219	10/00			CONT.	CONT.	
	MIPR	GRCI	0.000	0.042	03/00							
Travel	Various	Various	1.750	0.120	03/00	0.123	10/00			CONT.	CONT.	
Miscellaneous	Various	Various		0.144	03/00	0.077	10/00			CONT.	CONT.	
Subtotal Support and Management			2.556	0.501		0.419				CONT.	CONT.	
Remarks:												
Test & Evaluation	WR	OPTEVFOR	0.150	0.106	04/00						0.256	
	WR	NSWC Pt. Mugu, CA.	0.567								0.567	
	WR	NRL Washington, DC		0.825	03/00						0.825	
Subtotal T&E			0.717	0.931							1.648	
Total Cost			27.306	4.339		3.168		0.000		CONT.	CONT.	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5	Ship Self Defense / 0604755N				Advanced Integrated Electronic Warfare System (AIEWS)/K2309					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	51.839	43.619							Cont.	Cont.
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification: Advanced Integrated Electronic Warfare System (AIEWS) is the next-generation Electronic Warfare (EW) system which will be an integral part of the ship combat system (AEGIS and Ship Self Defense System (SSDS)). AIEWS will be developed in two sequential increments. Increment 1 will introduce advanced Electronic Support (ES) consisting of precision Electronic Support Measures (ESM), Specific Emitter Identification (SEI) and special receiver, increased processing throughput, open architecture, a standard combat system workstation with new Human Machine Interface (HMI), decoy integration, and EMI improvements. Increment 2 will introduce both Radio Frequency (RF) and Infrared (IR) advanced Electronic Attack (EA) capabilities including advanced off-board decoys. This development will support both backfit and forward fit. The Engineering and Manufacturing Development (EMD) prime contract includes EDMs to be used for multiple purposes: factory qualification tests, Landbased Testing (LBT) and Operational Assessment (OA), Wallops Island B/L 7 and 6 and SSDS combat system interface testing, Combat System Engineering Development System (CSEDS) testing and TECHEVAL/OPEVAL.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

(U) FY00 ACCOMPLISHMENTS:

- (U) (\$38.887) Continued AIEWS Increment 1 EMD prime contract; continue/complete incremental CDR; Lab/Field Activity support included.
- (U) (\$9.752) Continued CAPS software development.
- (U) (\$0.850) Continued development of Increment 1 logistics efforts.
- (U) (\$0.900) Continued EW Roadmap Study.
- (U) (\$0.450) Commenced planning and demonstration test and evaluation efforts to support engineering, development and operational testing.
- (U) (\$1.000) Planned combat systems integration efforts including SSDS/GCCS(M) and LAMPS/SH-60.

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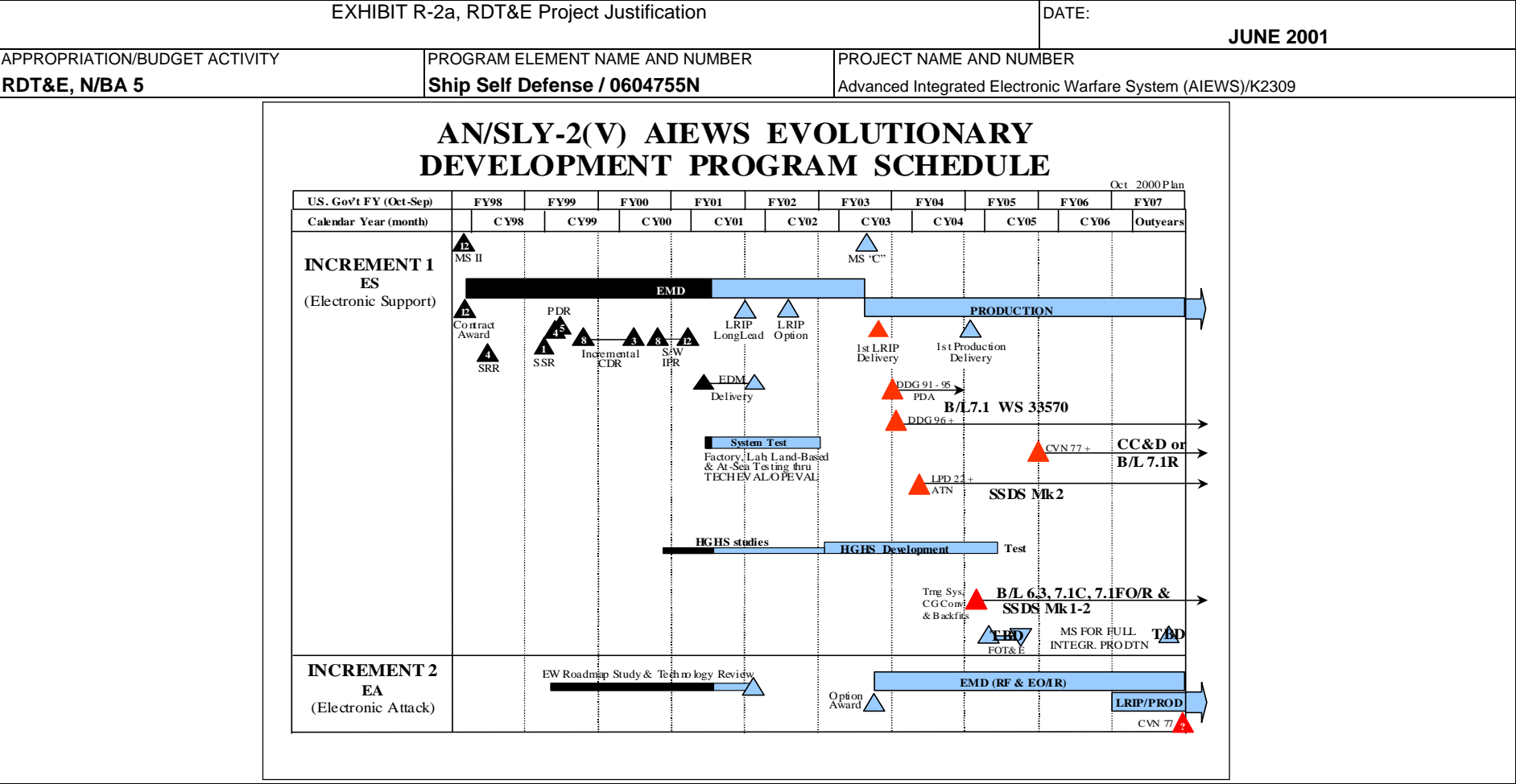
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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001																																						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER																																							
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309																																							
<p>U) FY01 PLAN:</p> <ul style="list-style-type: none">- (U) (\$33.085) Continue AIEWS Increment 1 EMD prime contract; Build EDMs; Lab/Field Activity support included.- (U) (\$8.173) Continue CAPS software development.- (U) (\$0.615) Continue development of Increment 1 logistics efforts.- (U) (\$1.746) Continue test and evaluation efforts to support engineering, development and operational testing.- (U) (\$0) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>(U) FY02 PLAN:</p> <p>This project moves to PE 0604757N in FY 2002</p> <p>B. (U) Other program Funding Summary</p> <table><thead><tr><th></th><th>FY2000</th><th>FY2001</th><th>FY2002</th><th>FY2003</th><th>FY2004</th><th>FY2005</th><th>FY2006</th><th>FY2007</th><th>To Complete</th><th>Total Cost</th><th></th></tr></thead><tbody><tr><td>OPN 231300</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td>CONT</td><td>CONT</td></tr><tr><td>AIEWS</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> <p>C. (U) Acquisition Strategy: The AIEWS program awarded its Increment 1 EMD Cost Plus Award Fee (CPAF) contract based on best value as a result of a full and open competition. Included in the contract were phased price options for Increment 1 LRIP and production. Other options include Increment 2 EMD and LRIP for RF and IR countermeasures Options for full contractor support</p>											FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost		OPN 231300	0	0	0							CONT	CONT	AIEWS											
	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost																																			
OPN 231300	0	0	0							CONT	CONT																																		
AIEWS																																													

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPAF	LMIS Syracuse NY	36.369	30.088	12/99	27.082	11/00			9.461	125.960	93.383
HGHS Development	TBD	TBD	-	-	-	-	-			TBD	TBD	TBD
Software Development	C/CPAF	DSR Fairfax VA	15.261	8.216	12/99	6.804	11/00			1.573	35.454	31.655
Systems Engineering	WR/RCP	NSWCDD	2.913	2.157	10/99	1.194	10/00			CONT	CONT	
Combat Sys Modification/Integration	Various	Various	1.114	1.000	03/00	-	11/00			CONT	CONT	
Miscellaneous	Various	Various	3.044	3.579	10/99	2.762	10/00			CONT	CONT	
Q-70 Procurement	FFP	LM/Eagan	0.686	0.210	03/00	0.520	03/01			0.000	1.416	N/A
Award Fees	C/CPAF	LM & DSR	1.371	1.852	08/00	1.369	04/01			1.829	7.592	N/A
Subtotal Product Development			60.758	47.102		39.731				CONT	CONT	
Remarks: Total cost for Increment 1 hardware development includes basic EMD contract EAC plus options in progress.												
Specialty Engineering												
Integrated Logistics Support												
Training												
Technical Engineering Services	WR/RCP	NRL	1.978	1.831	10/99	0.751	10/00			CONT	CONT	
Miscellaneous	Various	Various	2.545	2.140	10/99	1.043	10/00			CONT	CONT	
Subtotal Support			4.523	3.971		1.794				CONT	CONT	
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)									DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test Planning/T&E Events	WR/RCP	NSWCDD	0.200	0.200	10/99	0.575	10/00			CONT	CONT	
Miscellaneous	Various	Various	0.280	0.250	10/99	1.171	10/00			CONT	CONT	
Test Events (Aircraft Services	Various	Various	-	-	-	-	-					
Subtotal T&E			0.480	0.450		1.746				CONT	CONT	
Remarks:												
Program Management Support	Various	Various	0.715	0.150	10/99	0.185	10/00			CONT	CONT	
Travel				0.166		0.163						
Subtotal Management			0.715	0.316		0.348				CONT	CONT	
Remarks:												
Total Cost			66.476	51.839		43.619				CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 137 - 33 of 137 - 38

Exhibit R-3, Project Cost Analysis

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5	PROGRAM ELEMENT NAME AND NUMBER Ship Self Defense / 0604755N				PROJECT NAME AND NUMBER Infrared Search and Track (IRST) 22649					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	11.475	8.511	2.715							70.783
RDT&E Articles Qty										

A. (U) This project provides funding for the Infrared Search & Track (IRST) System. The threat from Sea Skimming Anti-Ship Cruise Missiles (ASCMs) is increasing at a substantial rate and is impacting the Navy's force protection and battle space dominance capability. The IRST program bolsters ships force protection capabilities by providing fully integrated passive detection/declaration of Sea Skimming ASCM threats. Because IRST operates in the infrared portion of the electromagnetic spectrum, it is immune to radar countermeasures and is not affected by atmospheric anomalies such as surface based ducting. In addition, IRST provides extremely accurate and precise elevation data at the horizon that allows immediate determination of hostile intent. IRST can also free up search radar resources by providing horizon search coverage where radar performance is marginal. The IRST provides passive augmentation to complement radar, electronic support measures and visual surveillance systems for air targets. IRST will identify those air targets to the ships' combat system.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 PLAN:

- (U) (\$0.933) Continued IRST system engineering (algorithm & simulation).
- (U) (\$0.099) Conducted contract engineering services.
- (U) (\$4.446) Continued detector design and fabrication.
- (U) (\$1.501) Continued Stabilized Platform Subsystem (SPS) design, fabrication, integration, and acceptance test.
- (U) (\$1.387) Continued signal processor (SPCU) design modification's and fabrication.
- (U) (\$1.280) Continued software modifications.
- (U) (\$0.747) Continued integrated logistics, reliability, maintainability, and training support.
- (U) (\$0.850) Independent Systems Engineering.
- (U) (\$0.232) Program Management/Technical Support.

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5	PROGRAM ELEMENT NAME AND NUMBER Ship Self Defense / 0604755N	PROJECT NAME AND NUMBER Infrared Search and Track (IRST) 22649
<p>2. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none">- (U) (\$1.256) Continue systems engineering; begin systems integration and testing.- (U) (\$1,810) Complete detector design and fabrication; conduct integration test.- (U) (\$1.068) Complete SPS design, fabrication, integration, and acceptance test.- (U) (\$1.319) Complete SPCU design modications and fabrication.- (U) (\$980) Continue software modifications.- (U) (\$690) Continue integrated logistics, reliability, maintainability, and training support.- (U)(\$919) Independent Systems Engineering.- (U) (\$270) Program Management/Technical Support.(U)(\$199) Portion of extramural program reserved for Small Business Innovation Research assessment law 15 USC 638. <p>3. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none">- (U) (\$862) Complete systems engineering; and begin systems integration and test.- (U) (\$670) Complete software modifications.- (U) (\$470) Complete integrated logistics, reliability, maintainability, and training support.- (U) (\$588) Independent Systems Engineering.- (U) (\$125) Program Management/Technical Support. <p>B. Other Program Funding Summary: Not Applicable</p> <p>C. Acquisition Strategy: Not Applicable</p> <p>D. Schedule Profile: See attached.</p>		

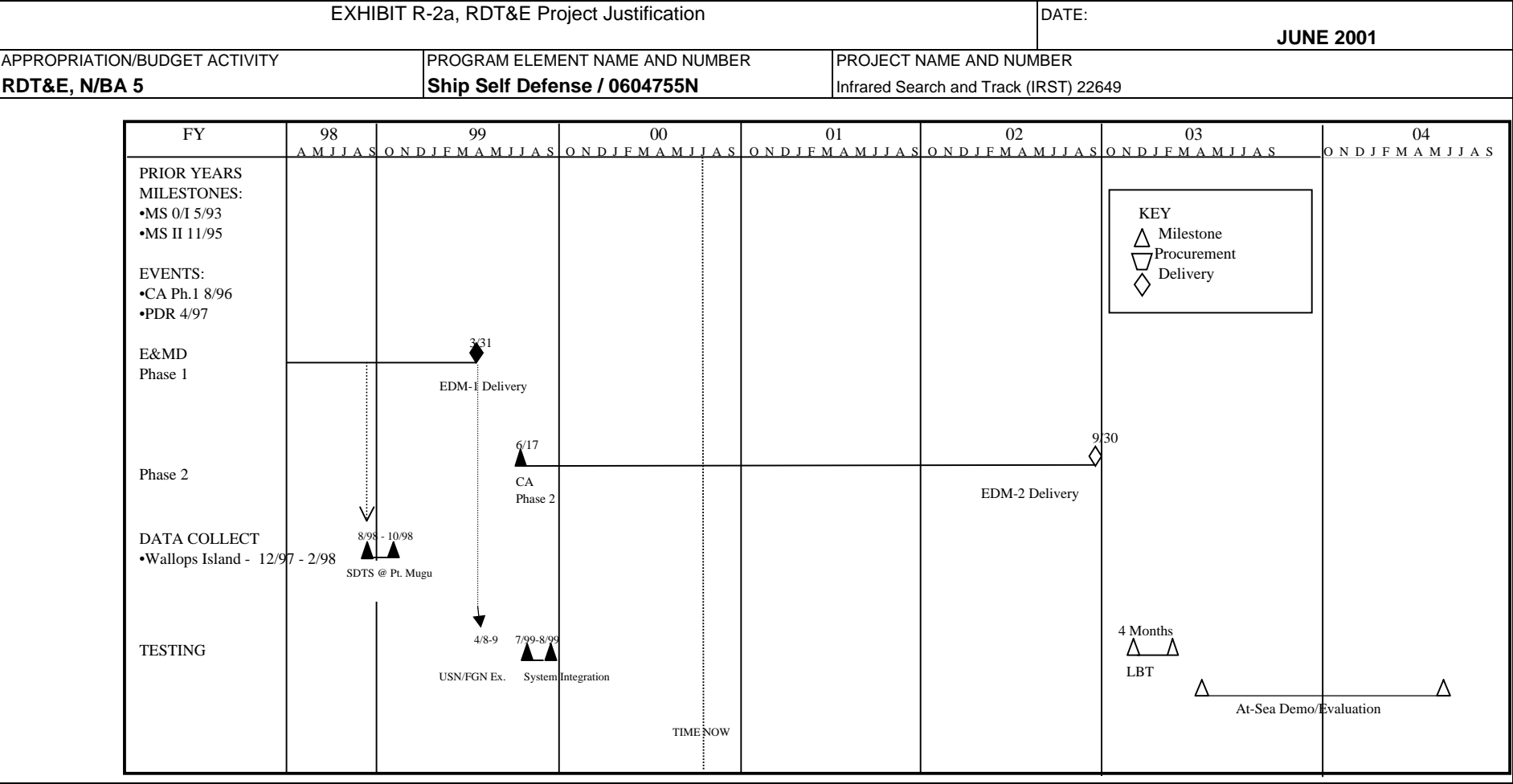
R-1 SHOPPING LIST - Item No. 137 - 35 of 137 - 38

Exhibit R-2a, RDT&E Project Justification

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R-1 SHOPPING LIST - Item No. 137 - 36 of 137 - 38

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NAME AND NUMBER					
RD&E, N/BA 5				Ship Self Defense / 0604755N			Infrared Search and Track (IRST) 22649					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware (Detector)	C/CPAF	LOCKHEED MARTIN	29.630	4.446	01/00	1.810	11/00			0.000	35.886	
Ancillary Hardware Development												
Systems Engineering (SE&SI&T)	C/CPAF	LOCKHEED MARTIN		0.933		1.256		0.862		Continuing	Continuing	
Contract Engineering Services		LOCKHEED MARTIN		0.099						1.000	1.099	
Tooling												
SPS	C/CPAF	LOCKHEED MARTIN		1.501		1.068		0.000		0.000	2.569	
Award Fees												
SPCU		LOCKHEED MARTIN	4.686	1.387	01/00	1.319				2.300	9.692	
Subtotal Product Development			34.316	8.366		5.453		0.862		Continuing	Continuing	
Remarks:												
Development Support Equipment												
Software Development		Various	1.080	1.280	Various	0.980	Various	0.670	Various	Continuing	Continuing	
Training Development												
Integrated Logistics Support				0.747		0.690		0.470		Continuing	Continuing	
Configuration Management												
Technical Data												
GFE												
Subtotal Support			1.080	2.027		1.670		1.140		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 137 - 37 of 137 - 38

Exhibit R-3, Project Cost Analysis

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Infrared Search and Track (IRST) 22649						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		NSWC/Lockheed Martin Joint Exercise	2.300				11/00			0.000	2.300	
Operational Test & Evaluation		NSWC/Lockheed Martin, Integration Testing	0.875				11/00			0.000	0.875	
Independent Systems Engineering GFE		NSWC/Dahlgren		0.850		0.919		0.588		Continuing	Continuing	
Subtotal T&E			3.175	0.850		0.919		0.588		Continuing	Continuing	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management/Tech Support	Various	Various	2.182	0.200	01/00	0.230	11/00	0.100		Continuing	Continuing	
Travel			0.055	0.032		0.040		0.025		Continuing	Continuing	
SBIR						0.199					0.199	
Overhead												
Subtotal Management			2.237	0.232		0.469		0.125		Continuing	Continuing	
Remarks:												
Total Cost			40.808	11.475		8.511		2.715		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 137 - 38 of 137 - 38

Exhibit R-3, Project Cost Analysis**UNCLASSIFIED**

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5					SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost			33.530						CONT.	CONT.
5" Rolling Airframe Missile/20167			4.808						CONT.	CONT.
NATO SEASPARROW/ 20173			28.722						CONT.	CONT.
Quantity of RDT&E Articles										
<p>A. Mission Description and Budget Item Justification</p> <p>The funding for this program was previously included in the Ship Self Defense - PE 0604755N . This program element provides funding for the development of systems that fulfill a portion of the third phase of the ship self defense: Engage. Development in this line will focus on hard kill capabilities in which missiles are used to intercept incoming ASCMs.</p> <p>(U) ENGAGEMENT: Both missile and terminal gun system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (20173) and 5" Rolling Airframe Missile (RAM) (20167). Missile improvements are to include improved kinematic performance plus advanced seeker and low elevation fuzing/warhead capabilities.</p>										

R-1 SHOPPING LIST - Item No. 138 - 1 of 12

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 12)

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: JUNE 2001																								
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	R-1 ITEM NOMENCLATURE SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N																									
<p>B. Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 15%; text-align: center;">FY 2000</th> <th style="width: 15%; text-align: center;">FY 2001</th> <th style="width: 20%; text-align: center;">FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget Submit:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Appropriated Value:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adjustments to FY2000/2001 Appropriated Value</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY2001 President's Budget:</td> <td></td> <td></td> <td style="text-align: right;">33.530</td> </tr> <tr> <td>FY 2002 PRESBUD Submit:</td> <td></td> <td></td> <td style="text-align: right;">33.530</td> </tr> </tbody> </table> <p>Funding:</p> <p>FY02: The net change in the NATO SEASPARROW Program is for the completion of the U.S. share of the EMD Cooperative effort and ESSM TECHEVAL/OPEVAL on a AEGIS DDG (+\$17.0), 5in Rolling Airframe Missile HAS adjustment (+\$1.4) and minor price adjustments (-\$0.46) added to the original amount previously included in PE 0604755N (+15.590).</p> <p>Schedule: Not applicable.</p> <p>Technical: Not Applicable.</p>				FY 2000	FY 2001	FY 2002	FY 2001 President's Budget Submit:				Appropriated Value:				Adjustments to FY2000/2001 Appropriated Value				FY2001 President's Budget:			33.530	FY 2002 PRESBUD Submit:			33.530
	FY 2000	FY 2001	FY 2002																							
FY 2001 President's Budget Submit:																										
Appropriated Value:																										
Adjustments to FY2000/2001 Appropriated Value																										
FY2001 President's Budget:			33.530																							
FY 2002 PRESBUD Submit:			33.530																							

R-1 SHOPPING LIST - Item No. 138 - 2 of 12

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 12)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			PROJECT NAME AND NUMBER NATO SEASPARROW/20173					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost			28.722						CONT	CONT
RDT&E Articles Qty										

A. Mission Description and Budget Item Justification: This project encompasses two (2) primary efforts to enhance ship self defense:

- (U) EVOLVED SEASPARROW MISSILE (ESSM):** A cooperative effort among 10 NATO SEASPARROW Nations, including the U.S., to improve the capability of the SEASPARROW Missile to counter the low altitude, highly maneuverable Anti-Ship Cruise Missile threat. The program consists of evolving the SEASPARROW Missile through the development of a new rocket motor with tail control; thrust vector control and ordnance (warhead) upgrade; modifications to the MK 41 VLS to fire from a single cell with 4 ESSM (QuadPack); and modifications to the NATO SEASPARROW Missile System (NSSMS) to provide ESSM capability.
- (U) NATO SEASPARROW- MK 91 Rearchitecture/SDSMS** The MK 91 Rearchitecture Program integrates NSSMS into the Ship Self Defense System (SSDS) Architecture to provide ship missile defense utilizing an open architected system. This effort consists of combining the Firing Officer Console and Radar Set Console functionality into a single Advanced Display System Console (AN/UYQ-70); modifying the Signal Data Processor and eliminating the MK 157 Computer Signal Data Converter and System Evaluation and Trainer, and redistributing this functionality within SSDS compatible microprocessors. This approach will eliminate the analog, point-to-point architecture, limited input-output channel and computer processing reserve deficiencies resident in the existing MK 57 NSSMS, and is required for ESSM. This modification also allows for full exploitation of the capabilities of the future ESSM and provides significant reductions (over 50%) in NSSMS cost of ownership and manning requirements.

Note: This Project was included in the Ship Self Defense PE 0604755N for FY 01 and Prior Years.

R-1 SHOPPING LIST - Item No. 138 - 3 of 12

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 3 of 12)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE(Engage: Hard Kill) 0604756	PROJECT NAME AND NUMBER NATO SEASPARROW/20173
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2002 PLAN</p> <p>(U) <i>ESSM</i>:</p> <p>(U) (\$27.646) Complete AEGIS S Band development. Conduct U.S. Unique DT-IIC/OT-IIC firings on SDTS. Conduct TECHEVAL/OPEVAL (DT-IIE/OT-IID) on Aegis Platforms. Complete the cooperative and sole ESSM EMD effort.</p> <p>(U) <i>NATO SEASPARROW</i>:</p> <p>(U) (\$1.076) Complete development of computer program suite for the NSSMS MK 57 Mod 7 (ReArchitecture) for CVNs with SSDS Mk 2 Mod 1. Support Integration testing with SSDS Mk 2 Mod 1 at Wallops Island. Enter CSIT for CVN 76 with SSDS Mk 2 Mod 0 at ICSTF. Address all deficiencies accruing from either Wallops Island or ICSTF testing.</p>		

R-1 SHOPPING LIST - Item No. 138 - 4 of 12

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a page 4 of 12)

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CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: JUNE 2001					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N BA-5		SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				NATO SEASPARROW/20173					
B. Other Program Funding Summary											
		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	To Complete	Total Cost
WPN BA-2											
Other Missiles, Evolved SEASPARROW (ESSM) (230700)		\$11.594	\$39.634	\$45.017						CONT	CONT
OPN BA-4											
NATO SEASPARROW (523700, 523705)		\$2.128	\$8.091	\$10.670						CONT	CONT
Related RDT&E:		PE 0603609 (Conventional Munitions) PE 0604307N (AEGIS Combat System Engineering) PE 0604755N (K2178 Quick Reaction Combat Capability (QRCC))									
C. Acquisition Strategy: ESSM is a directed sole source contract to Raytheon Missile Systems Company for LRIP, and upon successful completion of TECHEVAL/OPEVAL in FY 02, entering into Full Rate Production FY 03. Multi-year full rate production is the preferred approach for the NATO SEASPARROW Consortium.											
D. Schedule Profile: Changes as a result of manufacturing issues with the control actuator assembly for test assets and anomalies discovered with the radome are reflected.											
		<u>FY 2001</u>	<u>FY 2002</u>								
Program:		2Q LRIP PMR									
Engineering:											
T&E		1Q DT/OT-IIA 1Q DT/OT-IIC	AEGIS 3Q DT-IIIE/OT-IID								
Contracts:		Long lead 2Q LRIP CA Definitized 4Q LRIP CA OPTION 1	2Q LRIP CA OPTION 2								

R-1 SHOPPING LIST - Item No. 138 - 5 of 12

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA-5			SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			NATO SEASPARROW/20173						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
ESSM-Primary Hardware Development	LC/CPAF	HUGHES/RAYTHEON	120.687					9.485	10/01		130.172	130.172
		TDW	3.746								3.746	3.746
Ancillary Hardware Development	CPAF	LOCKHEED/UDLP	43.985								43.985	43.985
Systems Engineering	VARIOUS	VARIOUS	21.263					0.959	10/01		22.222	NA
NATO-Primary Hdwe Dev		HUGHES/RAYTHEON	29.098					1.026	11/01	CONT	CONT	
Software Development		TRACOR	2.346							CONT	CONT	
Systems Engineering		VARIOUS	4.385					0.000	10/01	CONT	CONT	
Subtotal Product Development			225.510					11.470		CONT	CONT	CONT
Remarks:												
ESSM												
Integrated Logistics Support	WR	NSWC PHD	2.818					0.500			3.318	
Engr Support	WR	VARIOUS	2.923					0.916	10/01		3.839	
NATO-MK 91/SDSMS												
ENGR SUPPORT	WR	VARIOUS	5.091					0.000	10/01	CONT	CONT	
Subtotal Support			10.832					1.416		CONT	CONT	
Remarks:												
Remarks:												

R-1 SHOPPING LIST - Item No. 138 - 6 of 12

Exhibit R-3, Project Cost Analysis
(Exhibit R-3 page 6 of 12)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)										DATE:		
APPROPRIATION/BUDGET ACTIVITY										JUNE 2001		
RDT&E, N BA-5												
PROGRAM ELEMENT										PROJECT NAME AND NUMBER		
SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N										NATO SEASPARROW/20173		
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC CL/PT Mugu	2.421					9.353	10/01		CONT	
SDTS/DT OT IIC	WR	NAWC WS	3.732								6.000	
OPEVAL/TECHEVAL	WR	VARIOUS (CORONA,APL, Dahlgren,NSWC PHD	1.050					5.130	10/01		CONT	
Subtotal T&E			7.203					14.483				
Remarks:												
ESSM-ENGR SPT	VARIOUS	VARIOUS	4.046					0.268	VARIOUS		CONT	
ESSM-PM SPT	VARIOUS	VARIOUS	0.471								0.471	
ESSM-LABOR	PD/WR		2.567					0.845	VARIOUS		CONT	
ESSM - TRAVEL	PD/WR		0.860					0.185	VARIOUS		CONT	
ESSM- MISC	VARIOUS	VARIOUS	1.880					0.005	VARIOUS		CONT	
NATO TRAVEL/MISC	VARIOUS	VARIOUS	1.333					0.050	VARIOUS		CONT	
Subtotal Management			11.157					1.353				
Remarks:												
Total Cost			254.702					28.722		CONT	CONT	
Remarks: The Firings of the ESSM aboard the Self Defense Test Ship in FY 02 are critical for the qualification and acceptance testing in a shipboard enviroment. The TECHEVAL /OPEVAL will provide the first guided intercept from a AEGIS Platform to Test Out the Weapon System and obtain Milestone III for the ESSM Full Rate Production.												

R-1 SHOPPING LIST - Item No. 138 - 7 of 12

Exhibit R-3, Project Cost Analysis
 (Exhibit R-3 page 7 of 12)

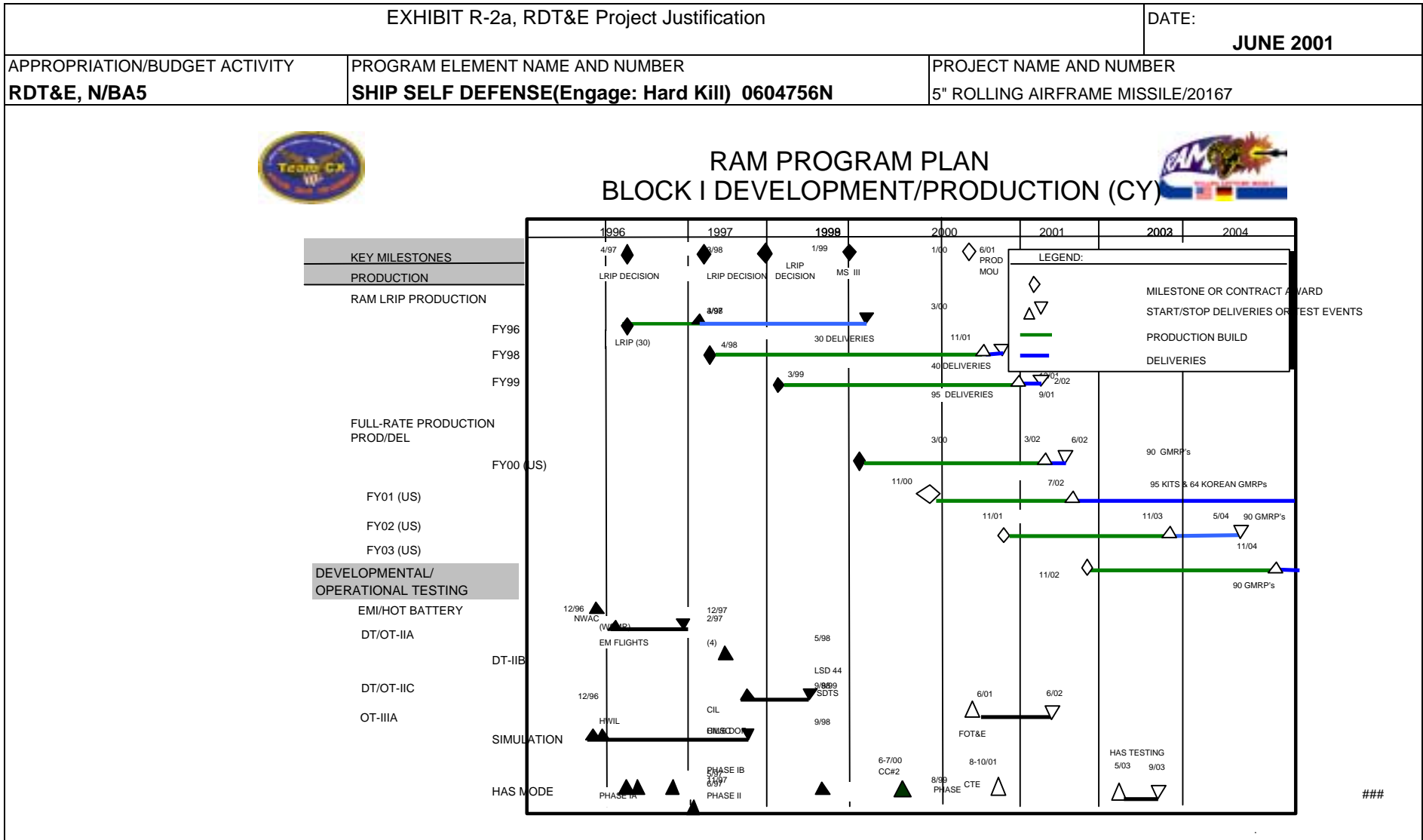
UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA5	SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				5" ROLLING AIRFRAME MISSILE/20167					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost			4.808						Continuing	Continuing
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: The purpose of this program is to develop a surface-to-air self-defense system utilizing a dual mode, passive Radio frequency/Infared 5" Ram Rolling Airframe Missile. The baseline system (Block 0) provides a self-defense capability against active radar-guided anti-ship missiles and was developed on an equal cost share basis with the Government of the Federal Republic of Germany. The RAM Block 1 provides a capability against passive anti-ship missiles, very low altitude missiles, and maneuvering missiles through the incorporation of an infrared all-the-way mode seeker and improved fuze.</p> <p>The RAM Block 1/Helo Air Surface (HAS) upgrade program is a joint requirement of the US and Germany agreed to in a Memorandum of Understanding (MOU) signed by both parties. This effort will provide an additional capability against helicopters, aircraft and surface craft. This system is designed to counter anti-ship cruise missile raids and other threats to provide for ship survivability with accurate terminal guidance, proven lethality, and no shipboard post launch dependence. SSDS/HAS Integration and Testing will continue through FY 2007.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS</p> <p>1. (U) FY 2002 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$3.960) SSDS/HAS Integration Support - (U) (\$.848) Continue HAS Mode Development <p>Note: This Project was included in the Ship Self Defense PE 0604755N for FY 01 and Prior Years.</p>										

EXHIBIT R-2a, RDT&E Project Justification								DATE: JUNE 2001																																		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				PROJECT NAME AND NUMBER 5" ROLLING AIRFRAME MISSILE/20167																																					
<p>B. Other Program Funding Summary</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:25%;"></th> <th style="width:10%;"><u>FY 2000</u></th> <th style="width:10%;"><u>FY2001</u></th> <th style="width:10%;"><u>FY 2002</u></th> <th style="width:10%;"><u>FY 2003</u></th> <th style="width:10%;"><u>FY 2004</u></th> <th style="width:10%;"><u>FY 2005</u></th> <th style="width:10%;"><u>FY2006</u></th> <th style="width:10%;"><u>FY2007</u></th> <th style="width:10%;"><u>To Complete</u></th> <th style="width:10%;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>OPN LINE 523800 (RAM)</td> <td>37.862</td> <td>36.472</td> <td>31.838</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>CONT.</td> <td>CONT.</td> </tr> <tr> <td>WPN LINE 224200 (RAM)</td> <td>43.937</td> <td>22.856</td> <td>43.024</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>CONT.</td> <td>CONT.</td> </tr> </tbody> </table> <p>C. Acquisition Strategy: SSDS/Helo/Aircraft/Surface (HAS) Integration and Testing FY 2000 - FY 2007.</p> <p>D. Schedule Profile: See attached.</p>											<u>FY 2000</u>	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To Complete</u>	<u>Total Cost</u>	OPN LINE 523800 (RAM)	37.862	36.472	31.838						CONT.	CONT.	WPN LINE 224200 (RAM)	43.937	22.856	43.024						CONT.	CONT.
	<u>FY 2000</u>	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>To Complete</u>	<u>Total Cost</u>																																
OPN LINE 523800 (RAM)	37.862	36.472	31.838						CONT.	CONT.																																
WPN LINE 224200 (RAM)	43.937	22.856	43.024						CONT.	CONT.																																

R-1 SHOPPING LIST - Item No. 138 -9 of 12

Exhibit R-2, RDT&E Project Justification
(Exhibit R-2a page 9 of 12)



R-1 SHOPPING LIST - Item No. 138 - 10 of 12

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 10 of 12)

Exhibit R-3 Cost Analysis (page 1)										DATE: JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NAME AND NUMBER					
RDT&E, N/BA5				SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			5" ROLLING AIRFRAME MISSILE/20167					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware/Softwr Developmt	SS/CPFF	Raytheon Co., Tucson, AZ	59.088					0.617	11/01	CONT.	CONT.	CONT.
SSDS/HAS Integration Support	SS/CPFF	JHU/APL, Laurel, MD	5.538					0.850	11/01	CONT.	CONT.	CONT.
SSDS/HAS Integration Support	SS/CPFF	Raytheon Co, San Diego, CA	0.000					1.026	11/01	CONT.	CONT.	CONT.
HAS Support	SS/CPFF	JHU/APL, Laurel, MD	0.000					0.536	11/01	CONT.	CONT.	CONT.
Miscellaneous	Various	Various	228.978					1.669	11/00	CONT.	CONT.	CONT.
Subtotal Product Development			293.604					4.698		CONT.	CONT.	CONT.
Remarks: Primary Hardware Development transitions into Test & Evaluation.												
Development Support Equipment												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.000					0.000		0.000	0.000	0.000
Remarks:												

Exhibit R-3 Cost Analysis (page 2)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			5" ROLLING AIRFRAME MISSILE/20167						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E/OT&E/FOT&E	SS/CPAF	Raytheon Co., Tucson, AZ	6.626					0.000		CONT.	CONT.	CONT.
DT&E/OT&E		China Lake, CA/PHD, CA	7.685					0.000		CONT.	CONT.	N/A
FOT&E		China Lake, CA/PHD, CA	0.000					0.000		CONT.	CONT.	N/A
Miscellaneous		Various	5.003					0.000		CONT.	CONT.	CONT.
Subtotal T&E			19.314					0.000		CONT.	CONT.	CONT.
Remarks:												
Cost Categories												
MANAGEMENT												
Miscellaneous	Various	Various	3.142					0.110	11/01	CONT.	CONT.	CONT.
Subtotal Management			3.142					0.110		CONT.	CONT.	CONT.
Remarks:												
Total Cost			316.06	5.689		3.734		4.808		Continuing	Continuing	CONT.
Remarks:												

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: <div>JUNE 2001</div>			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5					R-1 ITEM NOMENCLATURE Ship Self Defense (Engage: Soft Kill)/0604757N					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost			41.670						CONT.	CONT.
Shipboard EW Imp / K0954			2.308						CONT.	CONT.
NULKA/K2441			0.531						CONT.	CONT.
AIEWS / K2309/K2792/K2793			38.831						CONT.	CONT.
Quantity of RDT&E Articles										
A. Mission Description and Budget Item Justification This program element consolidates currently ongoing and planned programmatic efforts related to Engage: Soft Kill Electronic Warfare (EW) aspects of Ship Self Defense (SSD) to facilitate effective planning and management of these efforts and to exploit the synergistic relationship inherent in each. Analysis and demonstration have established that surface SSD based on single-sensor detection point-to-point control architecture performs marginally against current and projected Anti-Ship Cruise Missile (ASCM) threats. The supersonic seaskimming ASCM reduces the effective battle space to the horizon and the available reaction time-line to less than 30 seconds from first opportunity to detect until the ASCM impacts its target ship. Against such a threat, multi-sensor integration is required for effective detection, and parallel processing is essential to reduce reaction time to acceptable levels and to provide vital coordination/integration of hardkill and softkill assets.										

R-1 SHOPPING LIST - Item No. 139 - 1 of 139 - 16

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 1 of 16)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	R-1 ITEM NOMENCLATURE Ship Self Defense/0604757N	
<p>These SSD projects address and coordinate the detect and engage functions necessary to meet the rigorous SSD requirements within a development structure dedicated to systems engineering.</p> <p>(U) DETECTION: Improved coordinated sensor performance to increase the probability of detecting low altitude, low observable targets is to be achieved through the synergism gained from the integration of dissimilar sensor sources. Sensor improvements are addressed through the Shipboard Electronic Warfare Improvements (K0954) and Advanced Integrated Electronic Warfare System (K2309) projects. These improvements to both active and passive detection capabilities are complementary to the ship signature reduction technology also being pursued through Shipboard EW (K0954).</p> <p>(U) ENGAGEMENT: The offboard Active Decoy (NULKA, K2190) is a joint cooperative program between the United States and Australia to develop and engage an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. The Decoy is designed to counter a wide variety of present and future radar guided Anti-Ship Missile (ASM) threats by radiating a large radar cross section signal while flying trajectory.</p>		

R-1 SHOPPING LIST - Item No. 139 - 2 of 139 - 16

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 2 of 16)

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CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: JUNE 2001																									
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5		R-1 ITEM NOMENCLATURE Ship Self Defense/0604757N																									
<p>B. Program Change Summary:</p> <table> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget Submit:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Appropriated Value:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adjustments to FY2000/2001 Appropriated Value</td> <td></td> <td></td> <td></td> </tr> <tr> <td>FY2001 President's Budget:</td> <td></td> <td></td> <td>41.670</td> </tr> <tr> <td>FY 2002 PRESBUD Submit:</td> <td></td> <td></td> <td>41.670</td> </tr> </tbody> </table> <p>Funding: FY02: Shipboard EW Imp Program's AN/SLQ-32 adjustments (+\$2.300), AIEWS PBCG Offsets (-\$24.900), AIEWS increase to maintain program schedule (+\$38.800), minor price adjustments (-\$0.065), amount included in project amount transfered from PE 0604755N (+25.535) Schedule: Not applicable.</p> <p>Technical: Not Applicable.</p>					FY 2000	FY 2001	FY 2002	FY 2001 President's Budget Submit:				Appropriated Value:				Adjustments to FY2000/2001 Appropriated Value				FY2001 President's Budget:			41.670	FY 2002 PRESBUD Submit:			41.670
	FY 2000	FY 2001	FY 2002																								
FY 2001 President's Budget Submit:																											
Appropriated Value:																											
Adjustments to FY2000/2001 Appropriated Value																											
FY2001 President's Budget:			41.670																								
FY 2002 PRESBUD Submit:			41.670																								

R-1 SHOPPING LIST - Item No. 139 - 3 of 139- 16

Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, page 3 of 16)

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EXHIBIT R-2a, RDT&E Project Justification							DATE:			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N							PROGRAM ELEMENT NAME AND NUMBER Ship Self Defense 0604757N			
PROJECT NAME AND NUMBER Shipboard EW Improvements K0954										
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	0.000	2.308						Continuing	Continuing
RDT&E Articles Qty										
<p>A. (U) Mission Description and Budget Item Justification: The AN/SLQ-32(V) provides a family of modular shipborne electronic equipment which is installed in most combatants, CV/CVN, amphibians and auxiliaries in the surface Navy. The systems, which consists of five configurations, performs the mission of early detection, analyses, threat warning, and protection from anti-ship missiles. The (V)1 and (V)2 are computer controlled Electronic Support (ES) Systems that detect , sort, classify, identify and continuously display signals within frequency ranges. The (V)3 and (V)4 provide the capabilities of the passive system plus an integrated Active Electronic Attack (EA) response for all signals classified as a threat. The (V)5 provides for an EA capability on smaller class ships.</p> <p>CINCLANTFLT/CINCPACFLT msg R091300Z Jul 99 identified the AN/SLQ-032(V) system as experiencing extensive operational and readiness deficiencies. JFCOM, PACOM, and EUCOM have all submitted Component Commanders Issue Papers (CCIP) stating the need to keep the AN/SLQ-32 viable. Development of targeted improvements, ES/EA enhancements, and techniques for new threats are all necessary to ensure future mission tactical suitability and viability until it is replaced by AN/SLY-2 in approximately FY 2020.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>U) FY02 PLAN:</p> <p>- (U) (\$2.308) Initiate development of hardware and software to increase AN/SLQ-32(V) Anti-Ship Missile Defense (ASMD) effectiveness. The updates to hardware and software are needed to keep pace with Anti-Ship Missiles (ASMS) as they have evolved into more complex types of emitters. The environment in which the AN/SLQ-32(V) operates in has become increasingly dense. The AN/SLQ-32(V) updates will also aid in handling the significant increase in density of emitters.</p> <p>*This project transferred from PE 0604755N in FY 2002 (no funding was budgeted for this project in FY 2000 or FY 2001)</p>										

R-1 SHOPPING LIST - Item No. 139 -4 of 139 -16

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 16)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification								DATE:		
								JUNE 2001		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N		SHIP SELF DEFENSE 0604757N			Shipboard EW Improvements K0954					
B. (U) Other Program Funding Summary										
	FY 2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY 2006	FY 2007	To Complete	Total Cost
OPN BA-2 AN/SLQ-32(V) (231200)	1.883	0.000	1.971						cont	cont
O&MN, EW, AN/SLQ-32 (12CR0)	1.358	1.486	1.468						cont	cont
IN,ASMD, ANSLQ-32 (1D4D)	6.511	5.227	7.657						cont	cont
C. Acquisition Strategy: Not Applicable										
D. Schedule Profile: Not Applicable										

R-1 SHOPPING LIST - Item No. 139 -5 of 139 -16

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 5 of 16)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			Ship Self Defense 0604757N			Shipboard EW Improvements, K0954						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	RC/FFP	TBD	0.000					1.967	11/01	Continuing	Continuing	
Ancillary Hardware Development		Various	151.420								151.420	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			151.420					1.967		Continuing	Continuing	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000					0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 139-6 of 139-16

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 16)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			Ship Self Defense 0604757N			Shipboard EW Improvements, K0954						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		Various	8.563								8.563	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			8.563					0.000			0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WR	NSWC/CD & NRL						0.241		Continuing	Continuing	
Program Management Support	WR	NSWC/CD & NRL						0.100		Continuing	Continuing	
Program Management Support		Various	22.045								22.045	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			22.045					0.341		Continuing	Continuing	
Remarks:												
Total Cost			182.028	0.000		0.000		2.308		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 139-7 of 139-16

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 16)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604757N			PROJECT NAME AND NUMBER NULKA DECOY/K2190/K2441					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost			0.531						CONTINUING	CONTINUING
RDT&E Articles Qty										
<p>A. (U) Mission Description and Budget Item Justification The Offboard Active Decoy (NULKA) is a joint cooperative program between the United States and Australia that developed an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. NULKA is designed to counter a wide variety of present and future radar guided Anti-Ship Missiles (ASM) by radiating a large radar cross section while flying a ship-like trajectory. The United States developed the electronic payload and fire control system, while Australia developed the hovering rocket. Currently the United States is completing efforts to integrate with Ship Self Defense System (SSDS), maintain Electromagnetic Compatibility (EMC) with shipboard emitters, and integration with the Advanced Integrated Electronic Warfare System (AIEWS). In order to maintain our effectiveness in countering both current and evolving threats, it is critical to maintain a continuous RDT&E budget for payload modifications and testing. This will ensure we provide the fleet with a proven and effective capability that they can have complete confidence in when called on to go in harms way.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2002 Plan: - (U) (\$0.531) Develop radar cued decoy launch capability. Integration and test of new capabilities from Advanced Technology Demonstrations for fleet introduction in FY03/04.</p> <p>*This project transferred from PE 0604755N in FY 2002</p>										

R-1 SHOPPING LIST - Item No. 139 - 8 of 139 - 16

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 8 of 16)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification						DATE: JUNE 2001																								
APPROPRIATION/BUDGET ACTIVITY RDTE, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604757N			PROJECT NAME AND NUMBER NULKA Decoy/K2190/K2441																									
<p>B. (U) Program Change Summary: (OPN Line 553000)</p> <table><thead><tr><th></th><th>FY 2000</th><th>FY 2001</th><th>FY 2002</th><th>FY 2003</th><th>FY 2004</th><th>FY 2005</th><th>FY 2006</th><th>FY 2007</th><th>To Complete CONT.</th><th>Total Cost CONT.</th></tr></thead><tbody><tr><td>Anti-Ship Missile Decoy System</td><td>32.101</td><td>37.765</td><td>27.513</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> <p>C. (U) Acquisition Strategy: N/A</p> <p>D. (U) Schedule Profile: See Attached.</p>										FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete CONT.	Total Cost CONT.	Anti-Ship Missile Decoy System	32.101	37.765	27.513							
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete CONT.	Total Cost CONT.																				
Anti-Ship Missile Decoy System	32.101	37.765	27.513																											

R-1 SHOPPING LIST - Item No. 139 - 9 of 139 - 16

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 9 of 16)

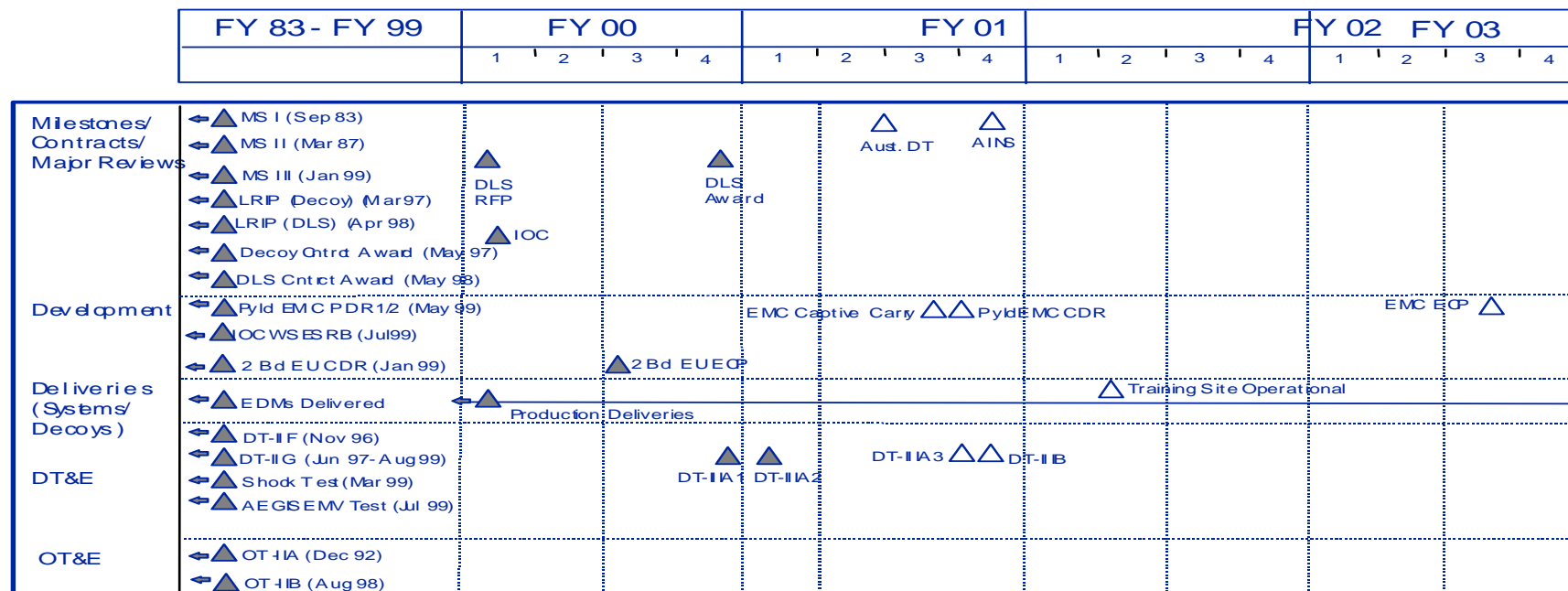
UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: JUNE 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604757N	PROJECT NAME AND NUMBER NULKA Decoy/K2190/K2441

OVERALL NULKA/MK 53 DLS SCHEDULE



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R-1 SHOPPING LIST - Item No. 139 - 10 of 139 - 16

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Exhibit R-2a, RDT&E Project Justification

(Exhibit R-2a, page 10 of 16)

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604757N			NULKA Decoy/K2190/K2441						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development	WR	NSWC Crane, IN	2.250					0.195	10/01	CONT.	CONT.	N/A
	WR	NSWC Indian Head, MD	2.047								2.047	N/A
	WR	NSWC Dahlgren, VA	4.723					0.195	10/01	CONT.	CONT.	N/A
	WR	NSWC Port Hueneme, CA	0.908								0.908	N/A
	WR	NRL Washington, DC	2.673								2.673	N/A
	SS/CPFF	Sippican Boston, MA	3.592								3.592	3.592
	SS/CPFF	BAeA, Australia	5.440								5.440	5.953
	SS/CPFF	TBD	0.000									
	PD	NAVSUP Washington, DC	2.400								2.400	2.400
Subtotal Product Development			24.033					0.390		CONT.	CONT.	CONT.
Remarks:												
Support and Management	CC/CPFF	Anteon Arlington, VA	0.806					0.047	11/01	CONT.	CONT.	
	MIPR	GRCI	0.000									
Travel	Various	Various	1.750					0.061	10/01	CONT.	CONT.	
Miscellaneous	Various	Various						0.033	10/00	CONT.	CONT.	
Subtotal Support and Management			2.556					0.141		CONT.	CONT.	
Remarks:												
Test & Evaluation	WR	OPTEVFOR	0.150								0.150	
	WR	NSWC Pt. Mugu, CA.	0.567								0.567	
	WR	NRL Washington, DC									0.000	
Subtotal T&E			0.717								0.717	
Total Cost			27.306					0.531		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 139 - 11 of 139 - 16

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 11 of 16)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE:			
							JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA 5	Ship Self Defense / 0604757N				Advanced Integrated Electronic Warfare System (AIEWS)/K2309					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	51.839	43.619	38.831						Cont.	Cont.
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification: Advanced Integrated Electronic Warfare System (AIEWS) is the next-generation Electronic Warfare (EW) system which will be an integral part of the ship combat system (AEGIS and Ship Self Defense System (SSDS)). AIEWS will be developed in two sequential increments. Increment 1 will introduce advanced Electronic Support (ES) consisting of precision Electronic Support Measures (ESM), Specific Emitter Identification (SEI) and special receiver, increased processing throughput, open architecture, a standard combat system workstation with new Human Machine Interface (HMI), decoy integration, and EMI improvements. Increment 2 will introduce both Radio Frequency (RF) and Infrared (IR) advanced Electronic Attack (EA) capabilities including advanced off-board decoys. This development will support both backfit and forward fit. The Engineering and Manufacturing Development (EMD) prime contract includes EDMs to be used for multiple purposes: factory qualification tests, Landbased Testing (LBT) and Operational Assessment (OA), Wallops Island B/L 7 and 6 and SSDS combat system interface testing, Combat System Engineering Development System (CSEDS) testing and TECHEVAL/OPEVAL.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

(U) FY02 PLAN:

- (U) (\$28.207) Continue AIEWS Increment 1 EMD prime contract; complete EDM build; Lab/Field Activity support included.
- (U) (\$4.750) Continue CAPS software development.
- (U) (\$1.089) Continue Increment 1 logistics efforts.
- (U) (\$4.785) Continue test and evaluation efforts to support engineering, development and operational testing of Increment 1; perform Operational Assessment (OA) & transition to LRIP.

*This project transferred from PE 0604755N in FY 2002

R-1 SHOPPING LIST - Item No. 139 - 12 of 139 - 16

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 12 of 16)

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CLASSIFICATION:

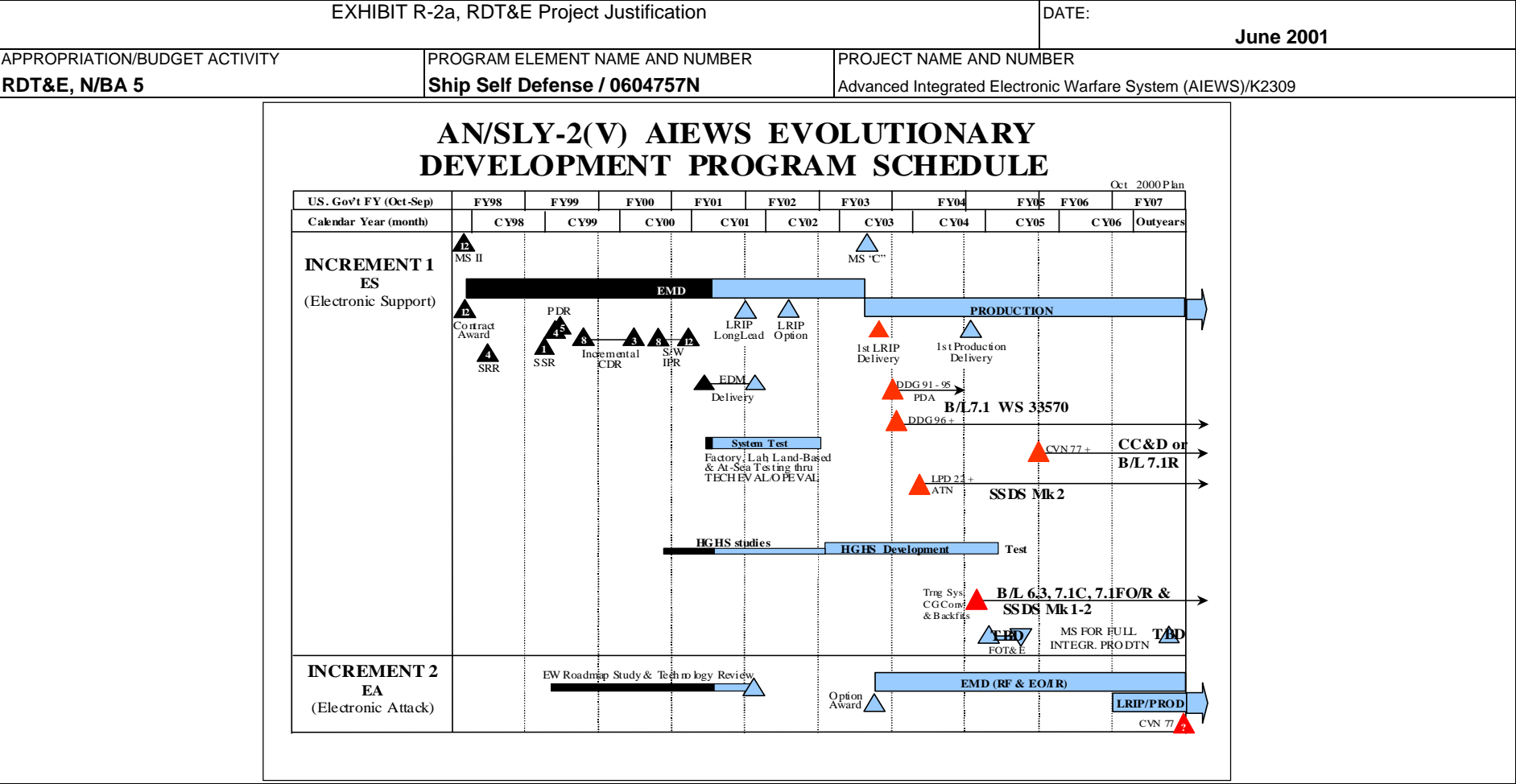
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EXHIBIT R-2a, RDT&E Project Justification							DATE:		JUNE 2001																																						
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER																																									
RDT&E, N/BA 5			Ship Self Defense / 0604757N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309																																									
<p>B. (U) Other program Funding Summary</p> <table><thead><tr><th></th><th>FY2000</th><th>FY2001</th><th>FY2002</th><th>FY2003</th><th>FY2004</th><th>FY2005</th><th>FY2006</th><th>FY2007</th><th>To Complete</th><th>Total Cost</th><th></th></tr></thead><tbody><tr><td>OPN 231300</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td>CONT</td><td>CONT</td></tr><tr><td>AIEWS</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> <p>C. (U) Acquisition Strategy: The AIEWS program awarded its Increment 1 EMD Cost Plus Award Fee (CPAF) contract based on best value as a result of a full and open competition. Included in the contract were phased price options for Increment 1 LRIP and production. Other options include Increment 2 EMD and LRIP for RF and IR countermeasures Options for full contractor support</p>													FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost		OPN 231300	0	0	0							CONT	CONT	AIEWS											
	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost																																					
OPN 231300	0	0	0							CONT	CONT																																				
AIEWS																																															

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: JUNE 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604757N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPAF	LMIS Syracuse NY	36.369					22.960	12/01	CONT	CONT	CONT
HGHS Development	TBD	TBD	-					-	-	TBD	TBD	TBD
Software Development	C/CPAF	DSR Fairfax VA	15.261					3.600	12/01	CONT	CONT	CONT
Systems Engineering	WR/RCP	NSWCDD	2.913					1.080	11/01	CONT	CONT	
Combat Sys Modification/Integration	Various	Various	1.114					0.274	03/01	CONT	CONT	
Miscellaneous	Various	Various	3.044					1.908	11/01	CONT	CONT	
Q-70 Procurement	FFP	LM/Eagan	0.686						N/A	0.000	1.416	N/A
Award Fees	C/CPAF	LM & DSR	1.371					1.171	08/01	CONT	CONT	N/A
Subtotal Product Development			60.758					30.993		CONT	CONT	
Remarks: Total cost for Increment 1 hardware development includes basic EMD contract EAC plus options in progress.												
Specialty Engineering												
Integrated Logistics Support												
Training												
Technical Engineering Services	WR/RCP	NRL	1.978					0.975	11/01	CONT	CONT	
Miscellaneous	Various	Various	2.545					1.762	11/01	CONT	CONT	
Subtotal Support			4.523					2.737		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 139 - 15 of 139 - 16

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 15 of 16)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)									DATE: JUNE 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604757N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test Planning/T&E Events	WR/RCP	NSWCDD	0.200					1.184	01/02	CONT	CONT	
Miscellaneous	Various	Various	0.280					2.555	01/02	CONT	CONT	
Test Events (Aircraft Services	Various	Various	-					1.046	01/01			
Subtotal T&E			0.480					4.785		CONT	CONT	
Remarks:												
Program Management Support	Various	Various	0.715					0.155	10/01	CONT	CONT	
Travel								0.161				
Subtotal Management			0.715					0.316		CONT	CONT	
Remarks:												
Total Cost			66.476	0.000		0.000		38.831		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 139 - 16 of 139 - 16

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 16 of 16)

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604771N

PROJECT NUMBER: M0933

PROGRAM ELEMENT TITLE: Medical Development
(Engineering)PROJECT TITLE: Medical / Dental
Equipment Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
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Medical / Dental Equipment Development

Total PE Cost	15,274	27,519	5,455						
M0933	4,028	27,519	5,455						
M2650	5,921								
M0933	4,931								
M2796	394								

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this item is to develop biomedical equipment and related techniques to reduce morbidity, to enhance the logistic feasibility of modern medical care for combat casualties, to sustain casualties for evacuation to fixed medical facilities for definitive care, and to ensure that personnel are medically qualified for military duty. Each work unit undertaken in this project has a documented, authenticated military requirement. Efforts are justified based upon military payoff and cost benefit. There is a strong potential for dual use, technology transfer, and biotechnology firms / industry participation in the projects.

(U) PROGRAM ACCOMPLISHMENT AND PLANS:

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$329) LASER THREAT ANALYSIS: Completed development of a mission planning tool to minimize the threat of man portable lasers to aircrew.
- (U) (\$600) FLIGHT OPERATIONS NOISE MITIGATION TEST-BED: Candidate noise mitigation materials have been selected and installed on an operational aircraft carrier. Testing of materials will be conducted during at-sea flight operations during the fourth quarter of FY 2000, with preliminary results due by the beginning of FY 2001.
- (U) (\$1,375) DNA VACCINE TECHNOLOGY: GMP manufacturing of a five gene liver stage malaria vaccine (MuStDO-5). Completion of eight safety and immunogenicity studies of this vaccine. Achieved approval of this vaccine as an investigational new drug by the FDA. The first clinical study of the vaccine, to determine the safety, immunogenicity and protective effects of the vaccine, will be started later in this fiscal year.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604771N

PROJECT NUMBER: M0933

PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT TITLE: Medical / Dental
Equipment Development

- (U) (\$1,385) TACTILE SITUATION AWARENESS SYSTEM (TSAS): Redesigned pneumatic sensors to achieve smaller size and incorporated them into a vest with a breakaway umbilical, designed to allow emergency egress from aircraft. Completed design of hardware for the electronic support systems. Successfully integrated the system with the V-22 simulator in Fort Worth, TX.
- (U) (\$339) VANGUARD S&T INITIATIVES GAME: Planned and organized an S&T requirements wargame to be held during the last quarter of the fiscal year.

2. (U) FY 2001 PLAN:

- (U) (\$2,786) DNA VACCINE TECHNOLOGY: Continue clinical testing of five gene liver stage DNA vaccine for malaria. GMP manufacturing of a 15 gene vaccine (MuStDO-15).
- (U) (\$200) FLIGHT OPERATIONS NOISE MITIGATION TEST-BED: Complete tests with best noise mitigation materials on aircraft carriers during at-sea flight operations. Deliver technical report.
- (U) (\$1,118) TACTILE SITUATIONAL AWARENESS SYSTEM (TSAS): Continue evaluation of system installed on V-22 simulator. Purchase additional suits for operational testing.
- (U) (\$230) VIRTUAL FIT CHECK SYSTEM: Begin and complete testing and validation, at two locations, of a virtual system to accurately measure aviation candidates for anthropometric fit in a variety of Naval airframes.
- (U) (\$165) CERTIFICATION OF MEDICAL ANCILLARY EQUIPMENT FOR USE IN HYPERBARIC CHAMBERS: Begin evaluation of various types of medical equipment for use in Navy hyperbaric chambers for certification and addition to the ANU list.
- (U) (\$278) EVALUATION OF FIELD-BASED PROCEDURES FOR SCREENING DIVER'S AIR: Begin field testing of devices to test compressor generated diver's air at the compressor out-put valve for oxygen, carbon dioxide, carbon monoxide and hydrocarbon content.
- (U) (\$400) RESCUE OF MILITARY CASUALTIES FOLLOWING LETHAL BONE MARROW INJURY : Develop clinically applicable therapy to rescue Bone Marrow following exposure to nuclear, chemical or biological weapons.

3. (U) FY 2002 PLAN:

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604771N

PROJECT NUMBER: M0933

PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT TITLE: Medical / Dental
Equipment Development

- (U) (\$2,000) DNA VACCINE TECHNOLOGY: Continue clinical testing of five gene liver stage DNA vaccine for malaria. Begin clinical testing of the 15 gene vaccine (MuStDO-15).
- (U) (\$1,936) TACTILE SITUATIONAL AWARENESS SYSTEM (TSAS): Complete operational testing of suits. Modify suits for use in a variety of airframes. Deliver final product to NAVAIR.
- (U) (\$198) CERTIFICATION OF MEDICAL ANCILLARY EQUIPMENT FOR USE IN HYPERBARIC CHAMBERS: Complete evaluation of various types of medical equipment for use in Navy hyperbaric chambers. Submit technical report to Supervisor of Diving for addition of items to the ANU list.
- (U) (\$218) EVALUATION OF FIELD-BASED PROCEDURES FOR SCREENING DIVER'S AIR: Complete field testing of devices to test compressor generated diver's air at the compressor out-put valve for oxygen, carbon dioxide, carbon monoxide and hydrocarbon content.
- (U) (\$756) VESTIBULAR TEST BATTERY TO DETERMINE SUSCEPTIBILITY TO DISORIENTATION: Evaluate technology to determine a subject's susceptibility to spatial disorientation prior to entering the aviation training pipeline.
- (U) (\$347) BI-ANNUAL VANGUARD S&T GAME: Plan and organize the bi-annual wargame to establish and validate medical S&T requirements.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604771N

PROJECT NUMBER: M0933

PROGRAM ELEMENT TITLE: Medical Development
(Engineering)PROJECT TITLE: Medical / Dental
Equipment Development

B. (U) PROGRAM CHANGE SUMMARY:

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>
(U) President's Budget:	4,044	5,273	5,416				
(U) Adjustments from FY 2000 PRESBUDG:	-16	22,246	-39				
(U) FY 2002 / 2003 President's Submission	4,028	27,519	5,455				

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding:

(U) FY 2000: decrease of (-16) for Section 8055: Proportionate Reduction

(U) FY 2001: Decrease of (-194) for Section 8086: .7% Pro-Rate Reduction

Increase of (3,000) due to FY 2001 Congressional Add – Bone Marrow Transplant Technology

Increase of (4,000) due to FY 2001 Congressional Add –Dental Research

Increase of (2,000) due to FY 2001 Congressional Add –High Resolution Digital Mammography

Increase of (1,500) due to FY 2001 Congressional Add –Mobile Intergrated Diagnostic

Increase of (6,000) due to FY 2001 Congressional Add –Voice Interactive Device

Increase of (1,000) due to FY 2001 Congressional Add –Smart Aortic Arch Catheter

Increase of (5,000) due to FY 2001 Congressional Add –Coastal Cancer Control

Decrease of (-60) for Government-Wide Rescission

(U) FY 2002: increase of (39) for minor adjustments.

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FY 2002 / 2003 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604771N

PROGRAM ELEMENT TITLE: Medical Development
(Engineering)

PROJECT NUMBER: M0933

PROJECT TITLE: Medical / Dental
Equipment Development

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0603706N, Medical Development.

D. (U) SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /BA-5						0604777N NAVIGATION/ID SYSTEMS					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
Total PE Cost		16.395	18.314	23.884							
F0253 Navigation and Electro-Optical Support		3.967	1.561	2.291							
W0676 Improved ID Development		0.000	0.000	1.771							
W1253 Combat ID System		1.296	3.147	6.077							
W2212 All Service Combat Identification Evaluation Test (ASCIET)		0.150	0.000	0.000							
X0921 NAVSTAR GPS Equipment		10.982	13.606	13.745							
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Reliable and secure Navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. The Photonics Mast (F0253) is a non-hull penetrating replacement for existing optical periscopes. The Photonics Mast exploits a wide portion of the electro-magnetic spectrum utilizing advanced Electro-Optic/thermal imaging and communications reception/Electronic Warfare Support Measures (ESM). The Combat Identification System (CIS) project (W1253) and Improved Identification Development (W0676) covers the Navy lead of a MK XII Mode5 upgrade to the existing Mark XII family of systems that is Joint and NATO interoperable. The All Service Combat Identification Evaluation Team (ASCIET) project (W2212) covers the Navy portion of a new joint service sponsored test and evaluation team effort, formerly the OSD sponsored Joint Air Defense Organization-Joint Engagement Zone (JADO-JEZ) program. The program is designed to evaluate cooperative and non-cooperative combat identification systems and tactics, as well as serve as a conduit for evaluating research and development in promising combat identification technologies. Per OSD direction, NATO participation is encouraged and performance data is exchanged to ensure the opportunity for interoperability with allied identification systems is maximized. NAVSTAR Global Positioning System (GPS), project (X0921) is a space-based radio positioning and navigation system that provides users with worldwide, all weather, three dimensional position, velocity and precise time data based on a constellation of 24 satellites. Navy Navigation Warfare (NAVWAR) is a key element and subset of this program and will provide Air and Sea units with jam resistant GPS antennas and GPS receivers to ensure the continued use of GPS information in a hostile environment. In addition to distinguishing friend from foe for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and air traffic control. Identification is multifaceted and includes information received from several sensors (both cooperative and non-cooperative systems).											

R-1 SHOPPING LIST - Item No. 141

Exhibit R-2, RDT&E Budget Item Justification

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EXHIBIT R-2a, RDT&E Budget Item Justification							DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support						
COST (\$ in Millions)		Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
F0253 Navigation and Electro-Optical Support			3.967	1.561	2.291							

A. (U) Mission Description and Budget Item Justification: The Photonics Mast mounted on the Universal Modular Mast will provide imaging capability for the VIRGINIA class submarine. The Photonics Mast design exploits a wide portion of the electro-magnetic spectrum through advanced E-O/thermal imaging and Electronic Support Measures (ESM)/Communications reception. It will provide major improvements in submarine stealth and infrared imaging capabilities. The non-hull penetrating design provides freedom in ship design as well as space savings for VIRGINIA CLASS and future design submarines. The system has been designed to satisfy Operational Requirement #365-87-94.

(U) Program Accomplishments and Plan:

- (U) FY 2000 Accomplishments:
 - (U) (\$1.482) Completed Shore Based Testing of Engineering Development Model.
 - (U) (\$1.024) Commenced Photonics Mast At-Sea Test and Evaluation.
 - (U) (\$0.992) Continued On-Board Team Trainer Development.
 - (U) (\$0.469) System Engineering Support.
- (U) FY 2001 Plan:
 - (U) (\$0.384) Continue Photonics Mast At-Sea Test and Evaluation.
 - (U) (\$0.542) Continue On-Board Team Trainer Development.
 - (U) (\$0.200) System Removal/Deinstallation Planning.
 - (U) (\$0.435) System Engineering Support.
- (U) FY2002 Plan:
 - (U) (\$0.915) Complete On-Board Team Trainer Development
 - (U) (\$0.123) EDM Removal
 - (U) (\$0.826) EDM Refurbishment
 - (U) (\$0.427) System Engineering Support

R-1 SHOPPING LIST - Item No. 141

Exhibit R-2a, RDT&E Project Justification

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Budget Item Justification					DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E,NBA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support		

B. (U) Program Change Summary

	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
FY2001 President's Budget:	4.062	1.575	2.288
Appropriated Value:	4.062	1.575	
Adjustment To FY2000/2001 Appropriated Value/FY2001 Presidents Budget	-0.095	-0.014	0.003
FY2002 PRES Budget Submit:	3.967	1.561	2.291

(U) Change Summary Explanation:

FY2000: SBIR Assessment (-\$71K), Across-the-Board Reduction (-\$22K), Section 8055: Congressional Rescission (-\$16K), FY2000 Actuals (+\$14K);
FY2001: Section 8086: 7% Pro-Rata (-\$11K), Government-Wide Recission (-\$3K).

(U) Schedule: Additional at sea testing required based on DT&E test results. The system will be left on the USS Annapolis to insure that all technical issues are resolved prior to installation on the Virginia class submarine.

(U) Technical: Not applicable.

C. (U) Other Program Funding Summary

	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
(U) SCN Line 201300	0	20.850	22.904	23.727						

(U) Related RDT&E

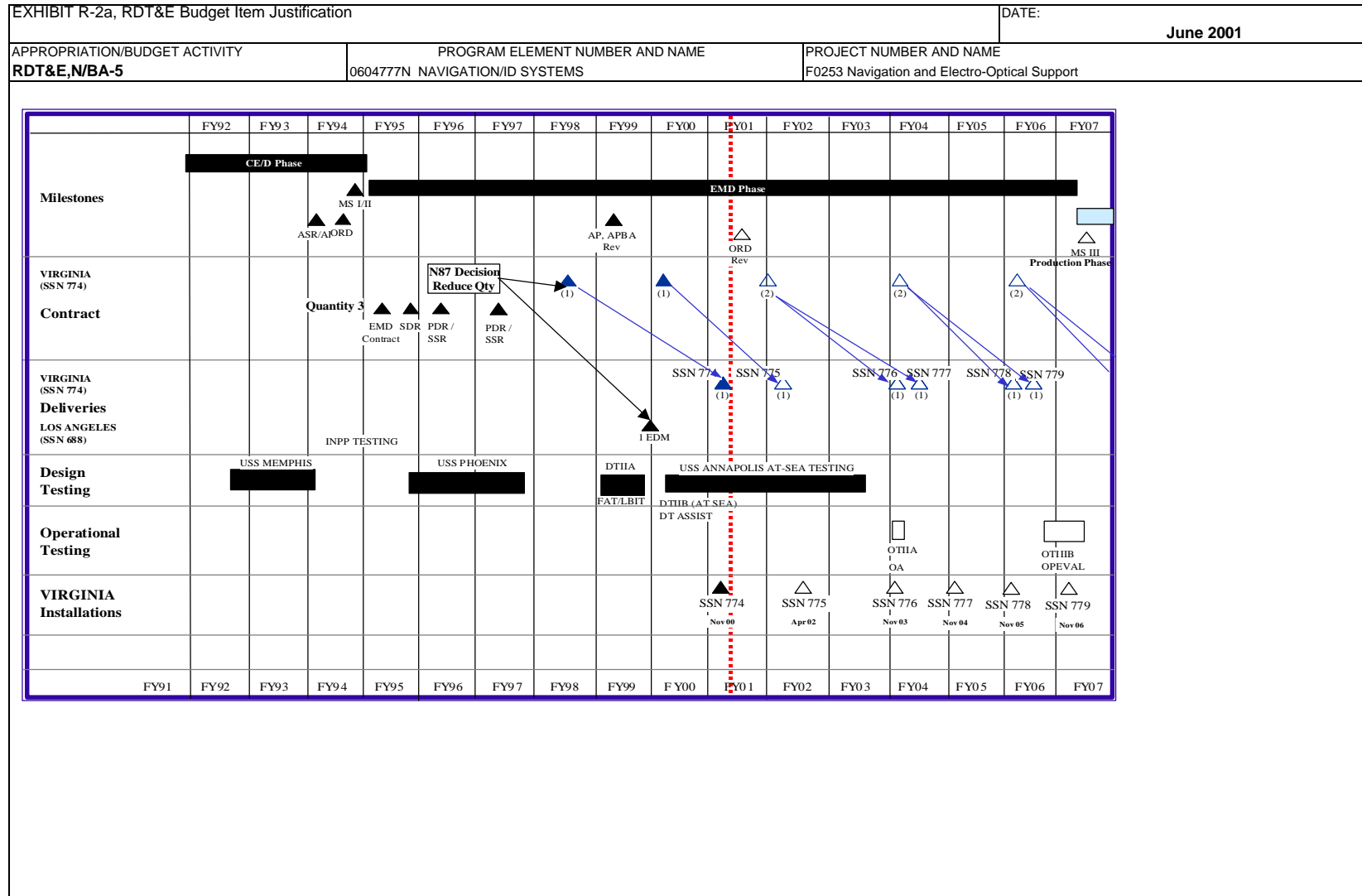
(U) PE 0603226E (Experimental Evaluation of Inovative Technology)
(U) PE 0604558N (The VIRGINIA Class Design Development)

D. (U) Acquisition Strategy: Not Applicable.

E. (U) Schedule Profile: See Attached.

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R-1 SHOPPING LIST - Item No. 141

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME F0253 Navigation and Electro-Optical Support					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPIF	Kollmorgen, Northampton, MA	31.975	2.198	10/99	0.506	10/00	0.926		1.380	36.985	
Software Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering	Various	Various	2.437	1.461		0.790		0.855		CONT.	CONT.	
Site Platform Integration											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			34.412	3.659		1.296		1.781		CONT.	CONT.	
Remarks:												
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 141

Exhibit R-3, Project Cost Analysis

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CLASSIFICATION:

Exhibit R-3 Cost Analysis								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NAME AND NUMBER F0253 Navigation and Electro-Optical Support						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Developmental/Operational T&E											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Management Support Services ETS	Various	Various	3.072	0.230		0.140		0.198		CONT.	CONT.	
Miscellaneous	Various	Various	0.254	0.017		0.065		0.252		CONT.	CONT.	
Travel			0.336	0.061		0.060		0.060		CONT.	CONT.	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			3.662	0.308		0.265		0.510		CONT.	CONT.	
Remarks:												
Total Cost			38.074	3.967		1.561		2.291		CONT.	CONT.	
Remarks:												

R-1 SHOPPING LIST - Item No. 141

Exhibit R-3, Project Cost Analysis

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EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS					PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	0.000	0.000	0.000	1.771							
RDT&E Articles Qty											
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Reliable and secure navigation and positive identification (ID) systems are essential elements of battle management in the naval environment. In addition to distinguishing friend from foe for weapons employment, the Navy requires secure, jam resistant Identification Friend or Foe (IFF) systems for battle group air defense management and air traffic control. Identification is multifaceted and includes information received from several sensors (both cooperative and non-cooperative systems). The Improved Identification Development project (W0676) covers the Navy lead of a MK XII Mode 5 upgrade to the existing Mark XII family of systems that is Joint and NATO interoperable. These funds provide for Mode 5 integration into the controls and displays of the AEGIS baseline weapon system.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <p>Not Applicable.</p> <p>2. FY 2001 PLANS:</p> <p>Not Applicable.</p> <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> - (U) (\$1.284) Initiate software development for Mode 5 integration into AEGIS weapon system baseline 5.3.8. - (U) (\$.486) Initiate integration testing of UPX-29 shipboard IFF system interface for AEGIS integration. 											

R-1 SHOPPING LIST - Item No. 141

Exhibit R-2a, RDT&E Project Justification

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT	

B. (U) PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.)

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	0	0	0
(U) Adjustments from the President's Budget:	0	0	1.771
(U) FY 2002 Presidents Budget Submit:			1.771

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY2002 net increase of \$1.771 million consists of a \$1.800 million increase for Mode 5 AEGIS integration, a net decrease of a \$.008 million for reprioritization of requirements within the Navy, and a \$.021 million decrease for economic assumptions.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY:

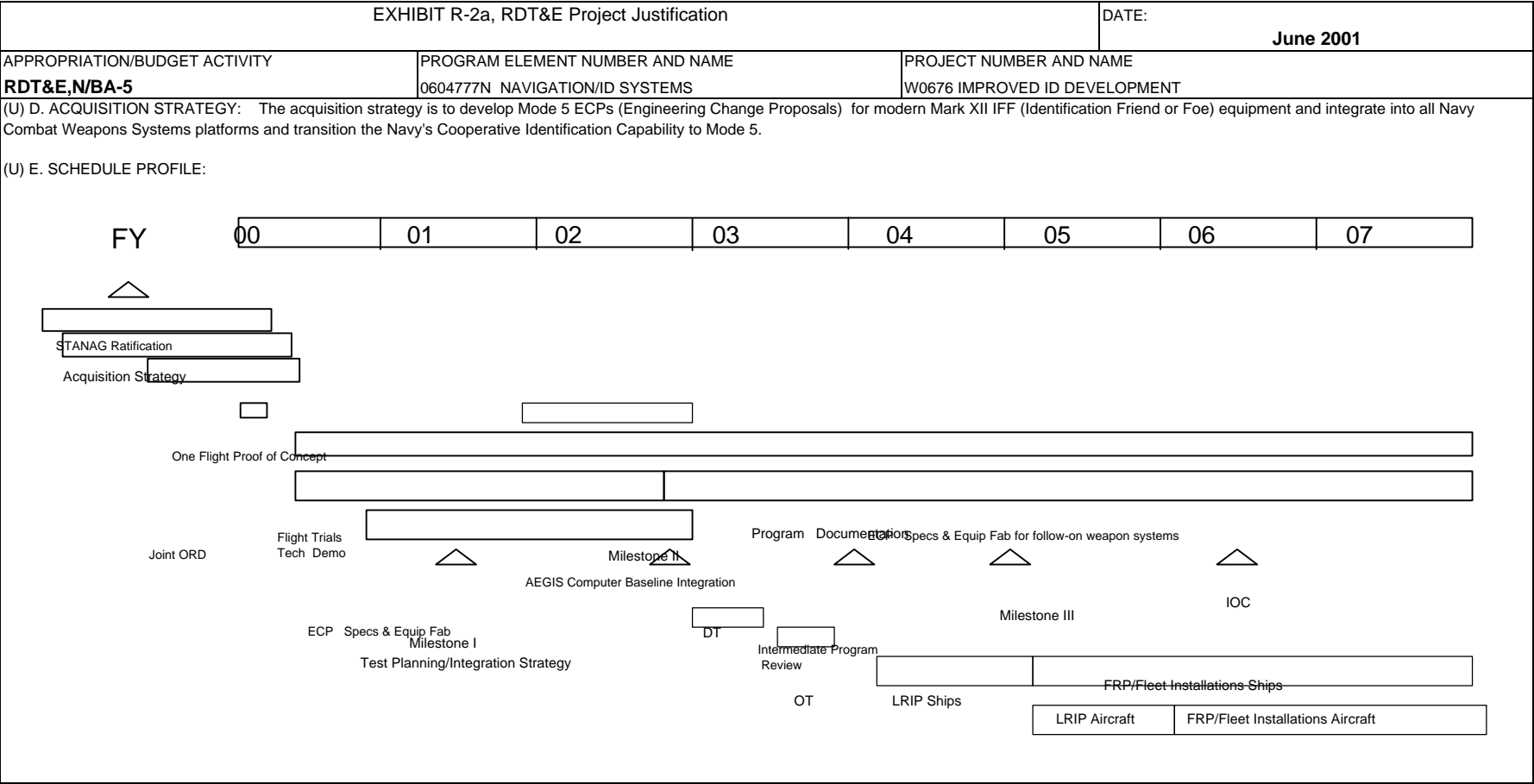
<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Identification Systems - 42MT	9.163	14.032	18.935

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Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5			PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME W0676 IMPROV ID DEVELOPMENT						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development											0.000		
Ancillary Hardware Development											0.000		
Systems Engineering											0.000		
Licenses											0.000		
Tooling											0.000		
GFE											0.000		
Award Fees											0.000		
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000		
Remarks:													
Development Support Equipment											0.000		
Software Development	WR	NSWC, Dahlgren/NAWCAD, Pax				1.284	11/01			Continuing	Continuing		
Training Development											0.000		
Integrated Logistics Support											0.000		
Configuration Management											0.000		
Technical Data											0.000		
GFE											0.000		
Subtotal Support			0.000	0.000		1.284		0.000		Continuing	Continuing		
Remarks:													

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Exhibit R-3, Project Cost Analysis

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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5			PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME W0676 IMPROVED ID DEVELOPMENT						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation										Continuing	Continuing	
Operational Test & Evaluation										Continuing	Continuing	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support	WR	NAWCAD, Pax				0.486	11/01			Continuing	Continuing	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.486		0.000		Continuing	Continuing	
Remarks:												
Total Cost			0.000	0.000		1.770		0.000		Continuing	Continuing	
Remarks:												

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EXHIBIT R-2a, RDT&E Project Justification								DATE:			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E,N/BA-5		0604777N NAVIGATION/ID SYSTEMS				W1253 Combat ID System					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		1.296	3.147	6.076							
RDT&E Articles Qty											
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: In 1995, the Under Secretary of Defense (Acquisition and Technology)/Vice Chairman, Joint Chiefs of Staff [USD(A&T)/VCJCS] tasked the Services to develop a high-level plan and long-range strategy for migrating to new digital Mark XII (MK XII) equipment. The services were also tasked to work with participating NATO Allies to develop a new MK XII waveform and document it in a NATO Standard Agreement (STANAG). The Navy took the lead in a waveform development effort conducted in coordination with a Five-Nation Technical Working Group (TWG), supported by Joint Services and Industry. The Navy, in conjunction with the TWG, designed, developed, modeled, and tested a new waveform – MK XIIA Mode 5. A separate Five-Nation Communication Security (COMSEC) group, led by the National Security Administration (NSA), developed a new cryptographic algorithm and associated Cryptographic Equipment Interoperability Requirements Specification. STANAG 4193, Parts V and VI were submitted to NATO in September 1998 for formal ratification. This STANAG is the standard that will ensure U.S./Allied interoperability for future Identification Friend or Foe (IFF) implementation programs that feature the new MK XIIA Mode 5 waveform.											
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:											
1. FY 2000 ACCOMPLISHMENTS:											
- (U) (\$.192) Developed Acquisition Strategy and required Mode 5 documentation, to include a draft ORD.											
- (U) (\$.400) Developed detailed cost estimates and conducted flight trials, test planning and preparation for Mode 5 Navy implementation.											
- (U) (\$.579) Conducted systems engineering for prototype IFF and Communication Security (COMSEC) hardware development.											
- (U) (\$.125) Conducted frequency supportability, modeling and simulation in support of Mode 5 Stage III frequency assignment.											
2. FY 2001 PLANS:											
- (U) (\$.190) Develop Test and Evaluation and platform integration strategy for MK XIIA Mode 5.											
- (U) (\$1.940) Begin development of Mode 5 hardware in preparation for the Developmental Test in FY03.											
- (U) (\$.400) Begin development of cryptographic hardware.											
- (U) (\$.073) Initiate Stage 3 Frequency Allocation waveform analysis and simulation.											
- (U) (\$.535) Continue to develop and coordinate program documentation.											
- (U) (\$.009) Portion of extramural program reserved for Small Business Innovation Reasearch assessment in accordance with 15 USC 68.											
3. FY 2002 PLANS:											
- (U) (\$2.577) Continue development of Mode 5 ECP including Stage 3 Frequency assignment and cryptographic hardware in preparation for the Developmental Test in FY03.											
- (U) (\$.385) Continue Mode 5 Test Planning and preparation.											
- (U) (\$3.114) Initiate software development for integration into F/A-18E/F.											

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EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																											
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W1253 Combat ID System																												
<p>B. (U) PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">FY2000</th> <th style="text-align: center;">FY2001</th> <th style="text-align: center;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: center;">0.886</td> <td style="text-align: center;">3.180</td> <td style="text-align: center;">3.514</td> </tr> <tr> <td>(U) Adjustments from the President's Budget:</td> <td style="text-align: center;">0.410</td> <td style="text-align: center;">-0.033</td> <td style="text-align: center;">2.563</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: center;">1.296</td> <td style="text-align: center;">3.147</td> <td style="text-align: center;">6.077</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2000 net increase of \$.410 million resulted from a Below Threshold reprogramming from the ASCIET program to the Combat ID System for Mode 5. The FY 2001 net decrease of \$.033 million consists of a \$.004 million decrease for reprioritization of requirements within the Navy and a \$.022 million decrease for a Congressional reduction and \$.007 million decrease for a Congressional rescission. The FY 2002 net increase of \$2.562 million consists of a \$2.693 million increase for MKXII IFF and a net decrease of \$.026 million for reprioritization of requirements within the Navy, and a \$.104 million decrease for economic assumptions.</p> <p>(U) Schedule: Not Applicable.</p> <p>(U) Technical: Not Applicable.</p> <p>C. (U) OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;"><u>FY 2000</u></th> <th style="text-align: center;"><u>FY 2001</u></th> <th style="text-align: center;"><u>FY 2002</u></th> <th style="text-align: right;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>Identification Systems - 42MT</td> <td style="text-align: center;">9.168</td> <td style="text-align: center;">14.032</td> <td style="text-align: center;">18.935</td> <td style="text-align: right;">Continuing</td> </tr> </tbody> </table>						FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	0.886	3.180	3.514	(U) Adjustments from the President's Budget:	0.410	-0.033	2.563	(U) FY 2002 President's Budget Submit:	1.296	3.147	6.077	<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>	Identification Systems - 42MT	9.168	14.032	18.935	Continuing
	FY2000	FY2001	FY2002																											
(U) FY 2001 President's Budget:	0.886	3.180	3.514																											
(U) Adjustments from the President's Budget:	0.410	-0.033	2.563																											
(U) FY 2002 President's Budget Submit:	1.296	3.147	6.077																											
<u>Line Item No. & Name</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>Total Cost</u>																										
Identification Systems - 42MT	9.168	14.032	18.935	Continuing																										

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EXHIBIT R-2a, RDT&E Project Justification						DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME W1253 Combat ID System		
<p>D. (U) ACQUISITION STRATEGY: The acquisition strategy is to develop Mode 5 ECPs (Engineering Change Proposals) for modern Mark XII IFF (Identification Friend or Foe) equipment and integrate into all Navy Combat Weapons Systems platforms and transition the Navy's Cooperative Identification Capability to Mode 5.</p> <div><div><div>FY 00</div><div>01</div><div>02</div><div>03</div><div>04</div><div>05</div><div>06</div><div>07</div></div><div><div><div>△ One Flight Proof of Concept</div><div>STANAG Ratification</div><div>Acquisition Strategy</div><div>Joint ORD</div><div><div><input type="checkbox"/> Flight Trials</div><div>Tech Demo</div></div><div>Program Documentation</div><div><div>ECP Specs & Equip Fab</div><div>ECP Specs & Equip Fab for follow-on weapon systems</div></div><div>Test Planning/Integration Strategy</div><div><div>Milestone I</div><div>Milestone II</div><div>Intermediate Program Review</div><div>Milestone III</div><div>IOC</div></div><div><div>DT</div><div>OT</div></div><div><div>LRIP Ships</div><div>FRP/Fleet Installations Ships</div></div><div><div>LRIP Aircraft</div><div>FRP/Fleet Installations Aircraft</div></div></div></div></div>							

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Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5			PROGRAM ELEMENT 0604777N NAVIGATION/ID SYSTEMS			PROJECT NUMBER AND NAME W1253 Combat ID System						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	VAR	VAR	0.185	1.844	VAR	0.852	VAR			Continuing	Continuing	
Ancillary Hardware Development											0.000	
Systems Engineering	VAR	NAWCAD, Pax	0.602	0.491	VAR	0.341	VAR			Continuing	Continuing	
SBIR				0.009							0.009	
											0.000	
											0.000	
Award Fees											0.000	
Subtotal Product Development			0.787	2.344		1.193		0.000		Continuing	Continuing	
Remarks:												
	VAR	VAR								Continuing	Continuing	
Software Development	VAR	VAR				3.114	VAR			Continuing	Continuing	
	VAR	VAR								Continuing	Continuing	
Integrated Logistics Support	VAR	VAR				0.145	VAR			Continuing	Continuing	
											0.000	
Technical Data	VAR	VAR				0.053	VAR			Continuing	Continuing	
											0.000	
Subtotal Support			0.000	0.000		3.312		0.000		Continuing	Continuing	
Remarks:												

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APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E,N/BA-5			0604777N NAVIGATION/ID SYSTEMS			W1253 Combat ID System						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	VAR	NAWCAD, Pax	0.275	0.190	VAR	0.385	VAR			Continuing	Continuing	
										Continuing	Continuing	
											0.000	
											0.000	
Subtotal T&E			0.275	0.190		0.385		0.000		Continuing	Continuing	
Remarks:												
Contractor Engineering Support	VAR	VAR				0.450				Continuing	Continuing	
Government Engineering Support	VAR	NAWCAD, Pax		0.467	VAR	0.477	VAR			Continuing	Continuing	
Program Management Support	VAR	NAWCAD, Pax	0.234	0.146	VAR	0.225				Continuing	Continuing	
Travel	VAR	VAR				0.035	VAR			Continuing	Continuing	
											0.000	
											0.000	
Subtotal Management			0.234	0.613		1.187		0.000		Continuing	Continuing	
Remarks:												
Total Cost			1.296	3.147		6.077		0.000		Continuing	Continuing	
Remarks:												

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APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME W2212 All Service Combat Identification					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost		0.150	0.000	0.000							
RDT&E Articles Qty											
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The All Services Combat Identification Evaluation Team (ASCIET) program was a Joint Requirements Oversight Council (JROC) – directed, four-Service organization located at Eglin AFB, Florida. ASCIET reports to the Office of Joint Chiefs of Staff, J-8. Oversight of ASCIET activities, which included annual evaluations of combat identification (ID) effectiveness on the Joint battlefield, was accomplished by the Director for Force Structure, Resources, and Assessment (DJ-8), in collaboration with the JROC Review Board (JRB).</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS:</p> <p>- (U) (\$.150) Attended ASCIET 00 Planning conferences and prepared and developed test plans and test procedures for collection of baseline parameter and event data collection and analysis.</p> <p>2. FY 2001 PLANS:</p> <p>Not Applicable.</p> <p>3. FY 2002 PLANS:</p> <p>Not Applicable.</p>											

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APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME W2212 All Service Combat Identification

B. (U) PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.

	FY2000	FY2001	FY2002
(U) FY 2001 President's Budget:	1.576	0	0
(U) Adjustments from the President's Budget:	-1.426	0	0
(U) FY 2002 Presidents Budget Submit:	0.150	0	0

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 2000 net decrease of \$1.426 million consists of \$1.416 million departmental adjustments and \$.010 million for a Congressional Rescission.

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

D. (U) ACQUISITION STRATEGY: This is a non-ACAT program and requires no specific acquisition strategy.

E. (U) SCHEDULE PROFILE: Not Applicable.

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EXHIBIT R-2, RDT&E Budget Item Justification								DATE:				
								June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E,NBA-5		0604777N NAVIGATION/ID SYSTEMS					X0921 NAVSTARS GPS Equipment					
COST (\$ in Millions)		Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program
X0921 NAVTAR Global Positioning System (GPS) Equipment			10,982	13,606	13,745							
A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The mission is to provide supported, affordable, integrated, and interoperable navigation solutions to the warfighters. RDT&E funds are used to perform all the non-recurring Global Positioning System (GPS) Surface Ship, Submarine and Aircraft Integration efforts. The Aircraft integration efforts are required for 102 different configurations of Navy, Marine Corps and Coast Guard aircraft in response to the CNO GPS Integration Guidance (GIG), the Public Law 103-160 and the Secretary of Defense As Soon As Possible direction of April 1996 (ASAP program). The GIG directs GPS design functional characteristics for the aircraft and Public Law 103-160 directs the schedule for completion of all installations by 30 September 2005. The GPS is a space-based radio positioning and navigation system that provides users with worldwide, all-weather, three-dimensional position, velocity and precise time data based on a constellation of 24 satellites. PMW/PMA-156 is the central office responsible for funding all GPS aircraft integration RDT&E efforts performed by over 20 NAVAIR program offices, dozens of DoD/Navy field activities and laboratories, and dozens of contractors. The aircraft installation recurring efforts are funded separately by PMW/PMA-156 and the platform program offices with APN dollars. The primary tasks to be accomplished for each of the 102 aircraft configurations include: GPS integration design studies; acquisition of aircraft and lab RDT&E assets; development of test aircraft hardware and/or software designs; development of Integrated Logistics Support (ILS) elements to support test (operator and maintenance training, technical manuals); and Formal Navy Test and Evaluation (Development and Operational Test). Other tasks include the development of new hardware systems to meet GIG requirements when existing systems are unsuitable (Miniaturized Airborne GPS Receiver (MAGR) 2000 for MH-53; Embedded GPS Inertial (EGI) for the EA-6B and F/A-18; the Digital Data Set (DDS); the Control Display Navigation Unit (CDNU) and associated software for many different aircraft) and the development of and modifications to the GPS Mission Planning Module for the Naval Mission Planning System (NAVMPMS)/Joint Mission Planning System (JMPS). The Surface Ship and Submarine integration efforts include two vitally important navigation integration initiatives. The first program is the Navigation Sensor System Interface (NAVSSI) development. The NAVSSI is the surface ship system which is integrated with over 54 systems on 145 surface ship platforms. This operational requirement for the NAVSSI has two distinct functions. The first is the integration and distribution of real time navigation and time sources, primarily GPS, to combat systems, combat support systems, air alignment systems and support systems. The second is as the primary surface ship navigators' electronic workstation required to perform fully integrated Electronic Chart Display Information System for the Navy (ECDIS-N) navigation. NAVSSI is an evolutionary acquisition development. The second surface ship development program is the replacement of the AN/WRN-6, which is out of production and approaching obsolescence, with low cost Versa Module Europa (VME) card technology (GPS VME Receiver Card (GVRC)) combined with Fiber Optic Antenna Link (FOAL) antenna capability. For NAVSSI ships, this integration will be done in conjunction with NAVSSI integrations. (For non-NAVSSI surface ships, PMW/PMA 156 is developing a low cost system to replace the AN/WRN-6.) For submarine systems, PMW/PMA 156 is supporting ongoing NAVSEA initiatives for the replacement of the AN/WRN-6 systems with the GVRC card technology. The National Defense Authorization Act for Fiscal Year 1999 included GPS language directing DoD to start "The development of an enhanced Global Positioning System [as] an urgent national security priority."												

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APPROPRIATION/BUDGET ACTIVITY RDT&E,NBA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment
<p>OSD directed (by PBD) the start of Navy GPS NAVWAR procurements starting in 2001 in order to equip Naval platforms with GPS Anti-Jam upgrades to enable them to operate in an environment with GPS interference. The Naval Research Advisory Committee (NRAC) GPS Vulnerability Study Panel tasked by OPNAV N6 and ASN(RD&A), assessed the Navy's GPS Vulnerabilities and recommended specific actions to resolve serious vulnerabilities. As a result, OPNAV N633 and N880 have drafted an ORD to address these operational requirements which have been validated and approved on June 7, 2000. This signed ORD is resulting in the formation of two ACAT III GPS NAVWAR programs(Air and Sea). This has become the Navy's GPS NAVWAR program. Given the current threat to GPS navigation from jamming, and the increasing use of GPS by potential adversaries, RDT&E funds are required to design, develop, and test anti-jam antenna and receiver equipment for use on naval platforms. Funds are also required to integrate identified JPO GPS modernization requirements (new signals in space, enhanced receiver security, and operation in controlled airspace) into naval platforms. All of the above efforts are directed by, tasked by and funded by PMW/PMA-156.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>(U) 1. FY 2000 ACCOMPLISHMENTS:</p> <p>(U) (\$5.236) Continued NAVSSI upgrade, integration engineering and testing with shipboard combat, weapons, navigation, and command and control systems. Evolutionary upgrades included all integrations required for the support Platform Integrations. Testing of evolutionary upgrades included collection/distribution of precise navigation and time data from/to Aircraft Carrier Systems, Aegis Weapon Systems, electronic charting integration, Meteorological and Oceanographic Systems(METOC), Carrier Air Traffic Control System (TPX-42), Computer Aided Dead Reckoning Tracer (CADRT) and Gun Weapon Systems(GWS). Developed interface support for CVN-76, CVN-69, LPD-17 and DDG-51 Navigation integration efforts. Began integrations with Voyage Management Systems(VMS), Integrated Bridge System (IBS). Continued RDT&E support of (NSSN) integration of GPS VME Receiver Card (GVRC). Continued development of Interactive Electronic Technical Manual (IETM) to meet the standards of the current NAVSSI Block.</p> <p>(U) (\$3.522) Continued aircraft integration effort.</p> <p>(U) (\$2.224) Began the NAVWAR air integration study for the CH-60S and SH-60R to determine the feasibility of integrating the GPS JPO production antenna (GAS-1) on the platforms. Began the Non-recurring Engineering (NRE) for integration design of the GAS-1 on the KC-130 platform including the preparation of the ECP/Technical Directive for the airframe.</p>		

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			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E,NBA-5	0604777N NAVIGATION/ID SYSTEMS	X0921 NAVSTARS GPS Equipment	
<p>Performed GAS-1 antenna compatibility investigation on several platforms including the KC-130, P-3C and EA-6B. Determined the Electro-Magnetic Interference/Electro-Magnetic Compatibility (EMI/EMC) capabilities of the GAS-1 antenna in terms of carrier Radio Frequency (RF) environment. Continued the Landing Craft Air Cushion (LCAC) GAS-1 antenna integration efforts and prepared for the "at sea" developmental tests with actual jamming. Participated in antenna requirements definition IPT at the GPS JPO. Initiated an antenna quick look study for attack submarines.</p> <p>(U) 2. FY 2001 PLAN:</p> <p>(U) (\$4.803) Continue NAVSSI upgrade, integration engineering and testing with shipboard combat, weapons, navigation, and command and control systems. Evolutionary upgrades include all integrations required for the support of Aircraft Carrier Platform Integrations, Theater Ballistic Missile Defense (TBMD) integration, radar overlay integration. Testing of evolutionary upgrades include collection/distribution of precise navigation and time data from/to Aircraft Carrier Systems, TBMD, radar overlay, Electronic Charting (ECDIS) integration and Extended Range Guided Munitions (ERGM). Develop interface support for LHD-8, LPD-18 and DDG-51 Navigation integration efforts. Begin integrations with Hostile Force Integrated Targeting System (HITS), AEGIS LAN Interconnection System Local Area Network (ALIS LAN), Tactical Control System (TCS), Position Location Reporting Systems (PLRS) and weather tracking. Develop a low cost GPS replacement system. Begin development for integration into emerging combat, combat support and support systems including Joint Precision Approach Landing System (JPALS). Continue support of NSSN integration of GVRC. Continue development of Interactive Electronic Technical Manual (IETM) to meet the standards of the current NAVSSI Block. Transition NAVSSI hardware/software into updated environment. Initiate precise time and time interval effort to support hot-starting GPS-guided munitions such as ERGM, Tomahawk, Standard Missile-3 (SM-3) and Land Attack Standard Missile (LASM). Restart development of NAVSSI Computer Based Trainer (CBT) to meet the standards of the current NAVSSI Block.</p> <p>(U) (\$1.303) Continue aircraft integration effort.</p> <p>(U) (\$7.500) Continue NAVWAR integration efforts on initial platforms and begin selected DT and OT testing on the C-130 and P-3C. Begin integration efforts on priority platforms in each of the other aircraft category areas, i.e. EA-6B and HH-60H. Continue RDT&E efforts on F/A-18 C/D (modeling/simulation and integration analysis). Complete LCAC test data reduction, validate modeling techniques, ground plane design, and conduct OT. Begin RDT&E modeling/simulation and integration /analysis for Mine Counter Measure (MCM) class ships.</p>			

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Exhibit R-2a, RDT&E Project Justification

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDTE,NBA-5	PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS	PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment
<p>Continue to evaluate anti-jam technology for application to selected Naval air, surface, and subsurface platforms. This includes continued evaluation of ongoing RDT&E special projects/SBIRs associated with anti-jam GPS user equipment and prevention programs. Continue support as the Navy's representative to the GPS Joint Program Office for all GPS Modernization Initiatives.</p> <p>(U) 3. FY 2002 PLAN:</p> <p>(U) (\$9.563) Complete Development Test/Operational Test (DT/OT) on the EA-6B and HH-60H. Validate aircraft modeling/simulation data. Start NAVWAR anti-jam antenna and receiver integration on F/A 18C/D and AV-8B. Begins RDT&E on F/A-18E/F and CH-60S.</p> <p>(U) (\$3.664) Complete DT/OT on the MCM. Begin RDT&E modeling/simulation and integration analysis for MCS and MCH class ships. Begin DT on the MCS and MCH class ship. Begin Modeling and Simulation and integration analysis for CG/DDG/DD class ships. Conduct LCAC/EGI integration analysis and test.</p> <p>(U) (\$.518) Continue participation as the Navy's representative to the GPS Joint Program Office for all GPS Modernization Initiatives. Begin evaluation of Navy platform GPS Modernization integration requirements. Continue to evaluate anti-jam technology for application to selected Naval air, surface, and subsurface platforms.</p> <p>B. (U) PROGRAM CHANGE SUMMARY</p> <p>(U)FY 2000: SBIR Assessment (-\$.048), NAVWAR GPS (+\$1.067), Section 8055: Congressional Proportionate Rescission (-\$.052), Micellaneous Navy Adjustment (-\$.112), Across the Board Reduction (-\$.057) FY 2001: Section 8086: .7% Pro-Rata Reduction (-\$.096), Government-Wide Recission (-\$.030)</p> <p>(U) Schedule: None.</p> <p>(U) Technical: None.</p>		

R-1 SHOPPING LIST - Item No. 141

Exhibit R-2a, RDT&E Project Justification

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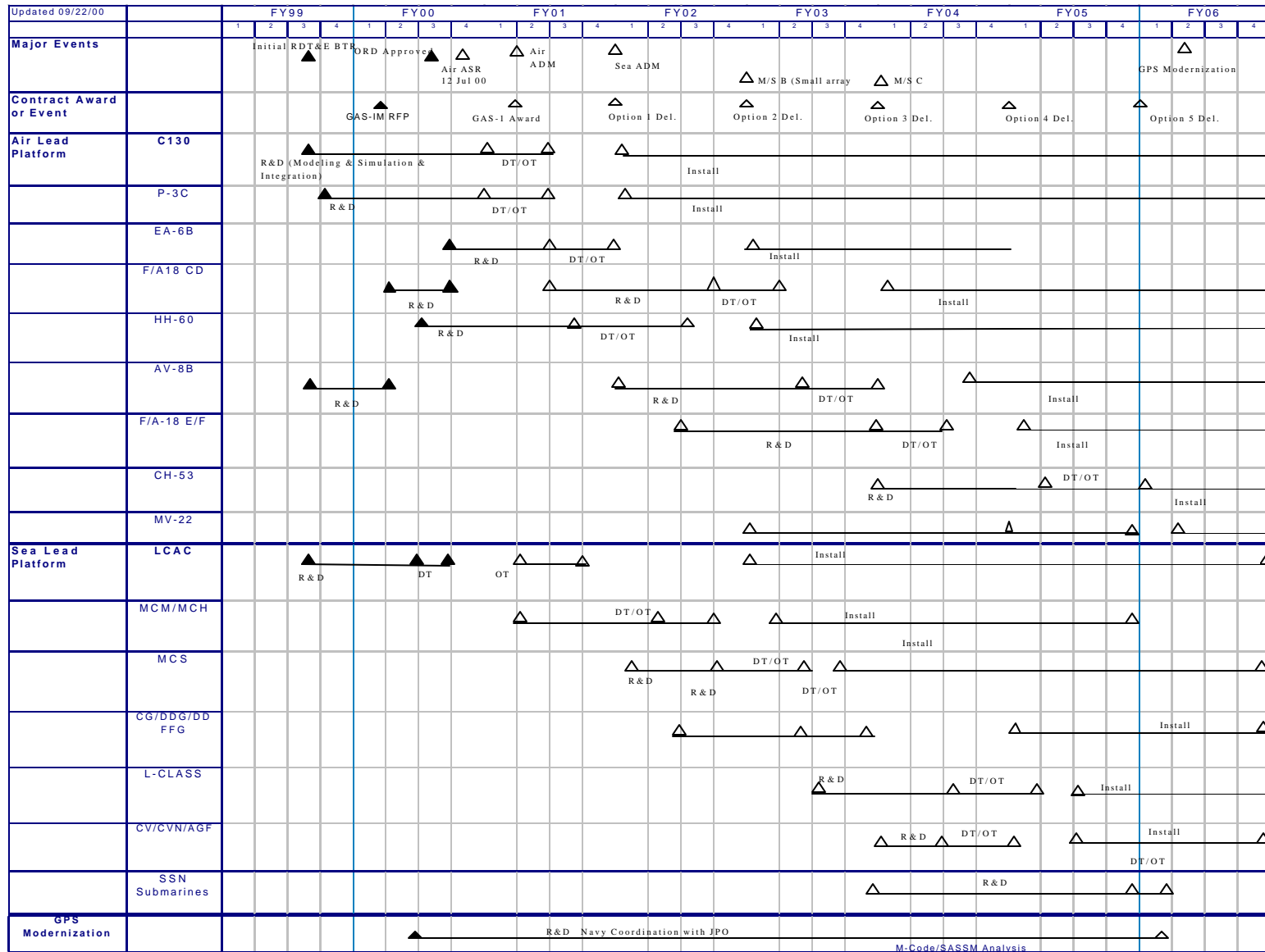
EXHIBIT R-2, RDT&E Budget Item Justification									DATE: June 2001																																																								
APPROPRIATION/BUDGET ACTIVITY RDT&E,N/BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS				PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment																																																										
<p>B. (U) Other Program Funding Summary</p> <table> <thead> <tr> <th></th> <th>FY 2000</th> <th>FY 2001</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> <th>FY 2006</th> <th>FY 2007</th> <th>To Complete</th> <th>Total Program</th> </tr> </thead> <tbody> <tr> <td>(U) O&MN PE # 0305164N</td> <td>2.168</td> <td>1.881</td> <td>2.523</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) OPN Line #26570</td> <td>8.596</td> <td>9.519</td> <td>9.857</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) APN - Common Avionics</td> <td>9.107</td> <td>13.035</td> <td>7.110</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Related RDT&D: None</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>D. (U) ACQUISTION STRATEGY: (NAVWAR) Participate in GPS Joint Program Office FY 01-FY 05 procurements for GAS-1 and GAS-1M anti-jam antennas. Investigate JPO/Navy contracting options for smaller array anti-jam antenna solutions for selected aircraft. Participate in GPS JPO procurements where practicable for GPS Modernization Enhancements. See attached Milestone chart.</p> <p>E. (U) Schedule Profile: See Attached.</p>												FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program	(U) O&MN PE # 0305164N	2.168	1.881	2.523								(U) OPN Line #26570	8.596	9.519	9.857								(U) APN - Common Avionics	9.107	13.035	7.110								(U) Related RDT&D: None										
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Program																																																							
(U) O&MN PE # 0305164N	2.168	1.881	2.523																																																														
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(U) Related RDT&D: None																																																																	

R-1 SHOPPING LIST - Item No. 141

Exhibit R-2a, RDT&E Project Justification

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R-1 SHOPPING LIST - Item No. 141

Exhibit R-2a, RDT&E Project Justification

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CLASSIFICATION:

Exhibit R-3 Cost Analysis						DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E,NBA-5			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS		PROJECT NUMBER AND NAME X0921 NAVSTARS GPS Equipment					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Dev. (F-14B, F-18B, S-3B, F-14D, C-12, Etc.)	Various	Other Contracts	260.415	0.169	Various	0.000		0.000	260.584	
Product Dev. (SSC -SD)	WX	SSC-SD	58.510	4.678	10/00	0.000		0.000	63.188	
Product Dev. (Other Inhouse)	WX	Various Field Activities	437.966	2.204	10/00	0.000		0.000	440.170	
Subtotal Product Development			756.891	7.051		0.000			763.942	
Remarks:										
Development Support Equipment	Various	Various	12.710	0.000		0.000		0.000	12.710	
Software Development									0.000	
Training Development									0.000	
Integrated Logistics Support									0.000	CONT.
Configuration Management									0.000	
Technical Data									0.000	
GFE									0.000	
Subtotal Support			12.710	0.000		0.000		0.000	12.710	CONT.
Remarks:										

R-1 SHOPPING LIST - Item No. 141

Exhibit R-3, Project Cost Analysis

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CLASSIFICATION:

Exhibit R-3 Cost Analysis						DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604777N NAVIGATION/ID SYSTEMS			PROJECT NAME AND NUMBER X0921 NAVSTARS GPS Equipment				
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
T&E (NAWC PAX)	WX	NAWC PAX	9.514	4.241	10/00	9.013	10/01	CONT.	CONT.	
T&E (DCS Corp)	T&M	DCS Corp, Pax	0.417	0.313	10/00	0.368	10/01	CONT.	CONT.	
T&E (SSC San Diego)	WX	SSC San Diego	0.000	0.800	10/00	3.300	10/01	CONT.	CONT.	
Subtotal T&E			9.931	5.354		12.681		CONT.	CONT.	
Remarks:										
Contractor Engineering Support										
Government Engineering Support										
Program Management Support	T&M	DCS Corp, San Diego	4.146	1.201	10/00	1.064	10/01	CONT.	CONT.	CONT.
Management Support Services										
Travel										
Labor (Research Personnel)										
Overhead										
Subtotal Management			4.146	1.201		1.064		CONT.	CONT.	CONT.
Remarks:										
Total Cost			783.678	13.606		13.745				
Remarks:										

R-1 SHOPPING LIST - Item No. 141

Exhibit R-3, Project Cost Analysis

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE
Advanced Deployable System X1300	39,077	30,924	34,711
Total	39,077	30,924	34,711

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Advanced Deployable System (ADS) is an undersea surveillance system composed of distributed sensors that can be rapidly and unobtrusively deployed in regional contingency areas for use against enemy submarines and in support of littoral warfare. It is designed to detect and track modern diesel electric and nuclear submarines, as well as provide the capability for tracking surface ships and detecting sea minelaying. ADS possesses great flexibility with respect to laydown options, ranging from single barrier to large area fields. It has built upon test experience with distributed sensor fields in shallow noisy water, and used collected data for processing verification. ADS utilizes conventional acoustic sensors and incorporates processing technologies and advanced sensors and technologies from other related programs.

1. (U) FY 2000 ACCOMPLISHMENTS:

- (U) (\$29,368) Initiated engineering and manufacturing development. Effort included the development of the operational Command and Control techniques for the Mission Planner. Also performed system engineering trade studies, conceptual design, functional analysis and requirements analysis. Initiated manufacturing technology /cost reduction engineering analysis and process design for array assembly and integration. Initiated engineering development of installation subsystem. Incorporated lessons learned from FET into PAS. Performed Design trade studies for EMD. Conducted Platform B deployment demonstration. Built and

R-1 Shopping List - Item No Page 142-1 of 142-11

Exhibit R-2,RDT&E Budget Item Justification

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

tested all optical array. Designed and tested low cost sensor (Smart Work Initiative). Continued to update all Logistics documentation incorporating PB-AODS material in support of a PB-AODS Independent Logistics Assessment (ILA) and the MS II Decision. Initiated long lead planning for manpower, personnel, training, spares, and support equipment.

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced
Deployable System

- (U) (\$2,709) Continued EDM contract definition. Managed ADS through monitoring of contractor and government technical, schedule, and cost performance. Participated in common efforts for DII COE Display, IUSS Systems Engineering, C4I initiatives, and IUSS Common processor.
- (U) (\$7,000) In order to support Web Centric Warfare, continued process development efforts at Orincon in field automation, event detection algorithm development and C4I. Supported definition and integration of ADS requirement into ARCI (formerly NCAP).

2. (U) FY 2001 PLAN:

- (U) (\$21,834) Continue engineering and manufacturing development. Continue manufacturing technology /cost reduction engineering analysis and process design for array assembly and integration. Within engineering and manufacturing development will begin detailed design of the EDM, component testing, and the detailed design and testing of deployment approach for the PB Underwater System arrays. Conduct Platform F deployment demonstration of single array system.
- (U) (\$8,392) Continue to conduct system engineering analysis of array design and array deployment options for P³I program. This includes efforts to begin PAS/C4I development of a small field OPEVAL system and the software development. Also includes engineering development of the PB method A barrier deployment and relay van concept. The PAS development will primarily occur through the ARCI(I) program and the C4I development is a coordinated effort with PD-15 and PD-17. Effort also includes beginning the software development of the Mission Planning workstation and preplanning for OPEVAL/TECHEVAL area. Initiate development of Logistics Management Information.
- (U) (\$698) Conduct integrated baseline review for EMD contract effort and award EMD contract. Manage ADS through monitoring of contractor and government technical, schedule, and cost performance.

R-1 Shopping List - Item No Page 142-3 of 142-11

Exhibit R-2,RDT&E Budget Item Justification

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced
Deployable System

3. (U) FY 2002 PLAN:

- (U) (\$2,100) Perform critical design review for Mission Planning work station. Begin to develop mission plans for OPEVAL/TECHEVAL.
- (U) (\$26,603) Continue development of PB Underwater System array design and design verification testing. Continue PB installation subsystem design.
- (U) (6,008) Processor development and C4I integration for OPEVAL will continue with unit and subsystem testing occurring during the year.

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced
Deployable System

B. (U) PROGRAM CHANGE SUMMARY:

FY 2000: Congressional Add for Advance Deployable System Acceleration (+22,000K), Across-the-Board Reduction (-\$203K), Federal Technology Transfer (FTT) (-\$20K), SBIR Assessment (-\$627K), Midyear Review Adjustment (+\$3,600K), Section 8055 Congressional Proportionate Rescission (-\$144K), Miscellaneous Navy Adjustments (-\$439K).

FY 2001: Congressional Add for Advance Deployable System Acceleration (+10,500K), Section 8086: .%7 Pro-Rata Reduction (-\$218K), Government-Wide rescission PL 106-554, Sec. 14 (-\$68K).

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in Thousands)

	FY2002
	<u>ESTIMATE</u>
OPN# 2221	N/A

(U) RELATED RDT&E: Not applicable.

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced
Deployable System

D. (U) ACQUISTION STRATEGY:

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Program	MS II		
Milestones	2 nd Qtr		
Engineering		Technical Baseline Rvw 1 st	
Milestones		Qtr PB Baseline Review 2 nd Qtr	
T&E	AODS System		Begin Design Verification
Milestones	Demo Test 4 th Qtr		Testing (DVT) 2 nd Qtr
Contract	Award EMD Eng.	EMD IBR 3 rd Qtr	
Milestones	Svcs. Contract 4 rd Qtr	Award EMD Contract 3 rd Qtr	

E. (U) SCHEDULE PROFILE:

See paragraph D above.

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Exhibit R-3, FY 2002/FY 2003 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X1300
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: Advanced
Deployable System

A. (U) PROJECT COST BREAKDOWN: (\$ in thousands)

Project Cost Categories	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
a. Mission Planning	2,900	1,062	2,100
b. PA Underwater System	12,211	1,034	
c. PB Underwater System	12,866	20,768	26,603
d. Processor	11,100	8,060	6,008
Total	39,077	30,924	34,711

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Exhibit R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT NUMBER: X1300
PROJECT TITLE: Advanced Deployable
System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 1)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date					
Prime Mission Product Development	C/CPAF	LMFS Manassas, VA	89,334		9/95							
Prime Mission Product Development	C/CPAF	LMFS Manassas, VA		12,669	10/00	11,402	10/01					
Government Engineering Support	WX	SSC-San Diego San Diego, CA	33,040	4,806	10/00	3,000	10/01					
Engineering Supt Services	C/CPFF	AHA Rockville, MD	3,100	20	10/00	159	10/01					
Engineering Supt Services	SS/CPFF	APL/JHU Laurel, MD	4,258	272	10/00	317	10/01					
Engineering Supt Services	SS/CPFF	ARL/UT Austin, TX	6,009	559	10/00	530	10/01					
Software Development	C/CPFF	Orincon San Diego, CA	11,420	4,114	10/00	2,650	10/01					
OTHER CONTRACTS			14,279	1,348	¹	3,280	¹					
OTHER ACTIVITIES			18,106	3,664		10,463						
Subtotal Product Development			179,546	27,452		31,801						
Remarks:												
1) Various contracts with different award dates and total cost values.												

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Exhibit R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5	PROGRAM ELEMENT: 0604784N	PROJECT NUMBER: X1300
	PROGRAM ELEMENT TITLE: Distributed Surveillance System	PROJECT TITLE: Advanced Deployable System

B.(U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 2)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date					
Contractor Engineering Support	C/CPFF	AMRON San Diego, CA	1,887									
Government Engineering Support	WX	SSC-San Diego San Diego, CA	6,824	200	10/00	300	10/01					
		OTHER CONTRACTS	12,940	1,657	1	700	1					
		OTHER ACTIVITIES	820	335								
Subtotal Support			22,471	2,192		1,000						
Remarks:												
1) Various contracts with different award dates and total cost values.												

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Exhibit R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT NUMBER: X1300
PROJECT TITLE: Advanced Deployable
System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 3)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date					
Developmental Test and Evaluation		OTHER CONTRACTS	7,574	308	¹	100	¹					
Developmental and Operational Test and Evaluation	WX	SSC-San Diego San Diego, CA	10,738	242		250						
Developmental and Operational Test and Evaluation		OTHER ACTIVITIES	4,658			610						
Subtotal T&E			22,970	550		960						
Remarks: 1) Various contracts with different award dates and total cost values.												

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Exhibit R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT NUMBER: X1300
PROJECT TITLE: Advanced Deployable
System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 4)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date					
Program Management Support	C/CPFF	AMRON San Diego, CA	5,277									
Program Management Support		OTHER CONTRACTS	5,041	300	¹	500	¹					
Program Management Support		OTHER ACTIVITIES	1,941	430		450						
Subtotal Management			12,259	730		950						
Total Cost			237,246	30,924		34,711						
Remarks:												
1) Various contracts with different award dates and total cost values.												

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE Program Element 0604800N, JOINT STRIKE FIGHTER (JSF) PROGRAM					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost				767.259	TBD	TBD	TBD	TBD	TBD	TBD	TBD
D2261/JSF EMD				767.259	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Quantity of RDT&E Articles										TBD	TBD

* Quantity of RDT&E Articles is TBD pending source selection.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Strike Fighter program will develop and field a family of aircraft that meets the needs of the USN, USAF, and USMC and allies, with optimum commonality among the variants to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom (UK) is a partner in this phase, and agreements with several other countries are in negotiation.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING AND MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

R-1 SHOPPING LIST - Item No. 143

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE:			
								June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME					
RDT&E, N / BA-5	0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM					D2261/JOINT STRIKE FIGHTER EMD					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost				767.259	TBD	TBD	TBD	TBD	TBD	TBD	TBD
RDT&E Articles Qty										*	
										TBD	

* Quantity of RDT&E Articles is TBD pending source selection.

This Program Element continues development efforts budgeted in program element 0603800N prior to fiscal year 2002.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Joint Strike Fighter program will develop and field a family of aircraft that meets the needs of the USN, USAF, and USMC and allies, with optimum commonality among the variants to minimize life cycle costs. This is a joint program with no executive service. Navy and Air Force each provide approximately equal shares of annual funding to the program. The United Kingdom (UK) is a partner in this phase, and agreements with several other countries are in negotiation.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS: Not Applicable.

2. FY 2001 PLANS: Not Applicable. (FY 2001 Appropriated funding was reprogrammed to Program Element 0603800N.)

3. FY 2002 PLANS: (Breakout reflects Navy, Air Force and UK funding only; excludes TBD anticipated other International funding)

- (U) (\$1,631.770) Prepare for and commence execution of EMD for a tri-service family of aircraft, continue development of a second, interchangeable, engine for competition in production (previously begun in associated program elements 0603800N and 0603800F) and provide mission support, including program office functions. Further breakout TBD pending completion of source selection.

R-1 SHOPPING LIST - Item No. 143

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 7)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:																
APPROPRIATION/BUDGET ACTIVITY RDTE&, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM	June 2001 PROJECT NUMBER AND NAME D2261/JOINT STRIKE FIGHTER EMD																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table><thead><tr><th></th><th><u>FY2000</u></th><th><u>FY2001</u></th><th><u>FY2002</u></th></tr></thead><tbody><tr><td>(U) FY 2001 President's Budget:</td><td>0</td><td>295.962</td><td>1,324.048</td></tr><tr><td>(U) Adjustments from the President's Budget:</td><td></td><td>-295.962</td><td>-556.789</td></tr><tr><td>(U) FY 2002 President's Budget Submit:</td><td>0</td><td>0.000</td><td>767.259</td></tr></tbody></table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: The FY 2001 decrease of \$295.962 million is due to a Congressional reduction of \$194.687 million for a projected schedule delay, a congressional reprogramming of \$100.344 million to PE 0603800N and a general Congressional reduction of \$.931 million. The FY 2002 decrease of \$556.789 million is due to a Service reduction of \$554.833 million due to a delay in the start of EMD, a reduction of \$1.607 million for reprioritization of requirements within the Navy, and a reduction of \$.349 million for economic assumptions.</p> <p>(U) Schedule: Milestone II and EMD start was delayed from Spring 2001 to Fall 2001 due to delayed start of the contractors' flight demonstrations.</p> <p>(U) Technical: Not Applicable.</p>				<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>	(U) FY 2001 President's Budget:	0	295.962	1,324.048	(U) Adjustments from the President's Budget:		-295.962	-556.789	(U) FY 2002 President's Budget Submit:	0	0.000	767.259
	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>															
(U) FY 2001 President's Budget:	0	295.962	1,324.048															
(U) Adjustments from the President's Budget:		-295.962	-556.789															
(U) FY 2002 President's Budget Submit:	0	0.000	767.259															

R-1 SHOPPING LIST - Item No. 143

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:			
							June 2001			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME				
RDT&E, N / BA-5		0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM				D2261/JOINT STRIKE FIGHTER EMD				
(U) C. OTHER PROGRAM FUNDING SUMMARY: (Dollars in Millions) This is a joint program with no executive service. Program Element 0604800F continues development efforts budgeted in program element 0603800F prior to fiscal year 2002. The United Kingdom is a partner in EMD.										
RDT&E	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
0604800F	0	0	769.511	TBD	TBD	TBD	TBD	TBD	TBD	TBD
United Kingdom	0	0	95.000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Related RDT&E:										
0603800N	238.420	341.164	0	0	0	0	0	0	0	1,950.617
0603800F	249.088	341.167	0	0	0	0	0	0	0	1,907.352
0603800E	0	0	0	0	0	0	0	0	0	118.006
United Kingdom	26.101	0.800	0	0	0	0	0	0	0	201.091
Multi-Lateral	5.100	1.700	0	0	0	0	0	0	0	32.100
Canada	3.300	0	0	0	0	0	0	0	0	10.600
Italy	0	0	0	0	0	0	0	0	0	10.000
Related PROCUREMENT: TBD										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM	PROJECT NUMBER AND NAME D2261/JOINT STRIKE FIGHTER EMD
<p>(U) D. ACQUISITION STRATEGY:</p> <p>Activities in prior phase centered around three distinct objectives to provide a sound foundation for the start of (EMD) in Fall 2001:</p> <ul style="list-style-type: none"> (1) facilitating the Services' development of fully validated, affordable operational requirements; (2) lowering risk by investing in and demonstrating key leveraging technologies that lower the cost of development, production and ownership; and (3) demonstrating operational concepts. <p>Early warfighter and technologist interaction was an essential aspect of the requirements definition process, and key to achieving JSF affordability goals. To an unprecedented degree the JSF Program used cost-performance trades early, as an integral part of the weapon system development process. The Services defined requirements through an iterative process, balancing weapon system capability against life cycle cost at every stage. Each iteration of requirements was provided to industry. They evolved their designs and provided cost data back to the warfighters. The warfighters evaluated trades and made decisions for the next iteration. This iterative process produced iterations of the Services' Joint Interim Requirements Documents in 1995, 1997, 1998 and culminated in the approved joint Operational Requirements Document (ORD) in FY 2000.</p> <p>A sizable technology maturation effort was conducted to reduce risk and life cycle cost (LCC) through technology maturation and demonstrations. The primary emphasis was on technologies identified as high payoff contributors to affordability, supportability, survivability, and lethality. Numerous demonstrations were accomplished to validate performance and life cycle cost impact to component, subsystem, and the total system.</p> <p>In November 1996 contracts were awarded to Boeing and Lockheed Martin for Concept Demonstration Programs. These competing contractors built and are flying concept demonstrator aircraft, conducted concept unique ground demonstrations, and refined their respective weapon system concepts. Specifically, Boeing and Lockheed Martin are demonstrating commonality and modularity, STOVL hover and transition, and low speed handling qualities of their respective weapon system concepts. Pratt and Whitney is providing propulsion hardware and engineering support. General Electric continues development of a second, interchangeable, engine for competition in production.</p> <p>Downselect to a single prime weapon system contractor for EMD and Milestone II are planned for Fall 2001.</p> <p>(U) E. SCHEDULE PROFILE:</p> <p>Fall 2001 Milestone II and Award of EMD Contract award</p>		

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 5 of 7)

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)							DATE:					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM			D2261/JOINT STRIKE FIGHTER EMD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
EMD	TBD	TBD				1,631.770	TBD			TBD	TBD	
Subtotal Product Development						1,631.770				TBD	TBD	
Remarks: FY 02 funding breakout is TBD pending completion of JSF source selection.												
Subtotal Support												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604800N/JOINT STRIKE FIGHTER (JSF) PROGRAM			D2261/JOINT STRIKE FIGHTER EMD						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Subtotal T&E												
Remarks:												
Subtotal Management												
Remarks:												
Total Cost						1,631.770				TBD	TBD	
Remarks: Funding Resources* FY02												
	0604800N		767.259									
	0604800F		769.511									
	United Kingdom		95.000									
			1,631.770									

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
							June 2001			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
Research Development Test & Evaluation, Navy / BA-5					Program Element (PE) Name and No. Smart Card Dev/Mod 0604910N					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Cost to Complete	Total Cost
Total PE Cost		0.000	1.228	0.896					Cont.	Cont.
Smart Card Office		0.000	1.228	0.896	0.715	0.716	0.717	0.733	Note 1	Note 1
Quantity of RDT&E Articles		0	0	0	0	0	0	0	0	0
Note 1: The President's FY01 budget submission shows a recurring requirement of . \$712										
		FY 2000	FY 2001	FY 2002	FY 2003					
FY 2001 President's Budget:		0.000	1.240	0.894	0.712					
Adjustment to FY 01 Pres Bud:		0.000	0.000	0.000	0.000					
FY 2002 DON Budget		0.000	1.240	0.894	0.712					
FY 2002 OSD Budget		0.000	1.231	0.894	0.712					
Adjustment to FY 02 President's Budget		0.000	-0.003						Cont.	Cont.
FY 2002 President's Budget		0.000	1.228	0.894	0.712					
A. Mission Description and Budget Item Justification:										
<u>Mission Description:</u> The Department of the Navy Smart Card Office's (DON SCO's) mission is to provide enabling technologies for the DON's Business and Information Assurance solutions by implementing smart card technology throughout the DON. The Smart Card will assist in the DON's transition from paper-based, manual processes to a paperless, automated, secure electronic environment. The Smart Card will accomplish four major functions: (1) serve as the DOD Military Identification Card; (2) authorize physical access to secure spaces; (3) function as the cyber-ID, authorizing access to information systems; and (4) meet the DON needs for specific applications while incorporating "process reengineering".										

R-1 SHOPPING LIST - Item No.

Exhibit R-2, RDT&E Budget Item Justification
 (Exhibit R-2, page 1 of 2)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NAME AND NUMBER Smart Card Dev/Mod 0604910N			PROJECT NAME AND NUMBER 52901 AAUSN IT					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Cost to Complete	Total Cost
Project Cost		0.000	1.228	0.896					Cont.	Cont.
RDT&E Articles Qty										

Budget Item Justification The Smart Card RDT&E funding will support two general efforts:

1. Web enabling legacy applications and databases. As part of the DON's Revolution in Business Affairs (RBA) and Revolution in Military Affairs (RMA), funding will be required to support development and modification of existing legacy code. This is required to permit communication between the legacy application, database and web server via Graphical User Interface (GUI) and Application Program Interface (API).
2. Development of 3rd generation (3G) smart card technologies. Successful adoption of 3G smart card technologies will require interface development for devices containing Wireless Application Protocol (WAP)s. In addition, interfaces will be developed to support new card based applications involving technologies, systems, and functionality not previously addressed.

FY 2001 Plan: The Smart Card RDT&E funding will support the two general efforts stated above.

B. Other Program Funding Summary

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>Cost to Complete</u>	<u>Total Cost</u>
O&M,N	21.437	12.907	11.855					Cont.	Cont.

C. Acquisition Strategy:

Smart Card related hardware and software will be procured using IDIQ contracts awarded primarily through GSA competitive bids. This approach reduces "time to contract award" through the use of GSA's pre-negotiated schedules while ensuring requirement exposure to several qualified contractors. All contracts have specific deliverables with well-staffed statements of work.

R-1 SHOPPING LIST - Item No.

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 2 of 2)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology				C2906 Marine Corps Information Technology DEV/MOD					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	0.000	6.770	11.031	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
RDT&E Articles Qty										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) The MAGTF Combat Service Support Element & Supporting Establishment (CSSE & SE) consists of mutually supporting Logistics Information Technology (IT) programs that support force deployment, planning, and execution; sustainment and distribution; and contribute to the CINC's Common Operating Picture (COP) to support rapid accurate decision making.</p> <p>1. The CSSE Shared Data Environment (SDE), formerly know as Data Warehousing, is a cornerstone concept of the Integrated Logistics Capability. It will incorporate data warehousing technologies and products to provide one-stop shopping for data supporting CSSE/SE decision-making processes. It will stage CSSE/SE data and integrate decision support tools (DST) to enable command and control (C2), situational awareness, and total asset visibility at all levels of command, from the CINC to the Company Commander. The establishment of the CSSE SDE will eliminate the need for individual applications to perform these tasks for themselves and will contribute to a more cost-</p> <p>2. The Marine Corps vision for Automated Information Technology (AIT) is the proper mix of a suite of technologies that enables each user to efficiently and effectively capture, aggregate, and transfer data and information, and, as a consequence, integrate with Logistics Automated Information Systems (LOG AIS) using the optimum technology for their particular application. Individual user's data and information will be integrated with DoD-wide systems technologies, software, and encoding formats as well as with international commercial applications and users. AIT will facilitate data collection and flow to all AISs to better achieve full Total Asset Visibility (TAV), and enhance and streamline business processes and warfighting capability. AIT technology will ensure current DoD applications maintain compatibility while remaining postured to implement future technological advances and process changes. Effective use of AIT will streamline the Marine Corps' logistics processes and enhance its warfighting capabilities.</p> <p>3. Total Force Structure Management System (TFSMS) is a replacement for 4 existing systems: Table of Manpower Requirements (T/MR), Logistics Management Information System (LMIS), Trooplist, and Manning Level Process (MLP). The result will be consolidated management of Tables of Organization (T/O) & Tables of Equipment (T/E) via a single integrated system.</p> <p>4. Total Force Administration Systems (TFAS) are to be used by commanders, staffs and individual Marines in the active duty, retired and reserve forces and will give the ability to conduct centralized and decentralized processing of payroll and personnel administration information. This centralized processing and database will enhance and assist decision-making by providing improved quality of life services to the Marines. TFAS will integrate and share information from sources both internal to the Marine Corps Total Force System and other databases such as the Personnel Evaluation System and the Manpower Order Writing System.</p> <p>5. Student Entry Level Management System (SELMS) is a mainframe application to be used to manage the accession, training, and classification of Marines. A full reengineering effort is taking place that will be integrated with other Manpower systems including the Marine Corps Manpower Operational Data Store, the Marine Corps Total Force System, and the Total Force Data Warehousing, the Manpower Models, By-Name-Assignment system, and the Marine Corps Recruiting Information Support System. An integral function of SELMS is the capability for a certifying officer to review and modify any of the data that is entered during day-to-day processing.</p> <p>6. The Marine Corps Performance Evaluation System (PES) provides for the periodic reporting, recording and analysis of the performance and professional character of Marines in the grades of Sergeant through Major General. Its fundamental concepts are accuracy, accountability, simplicity and consistency of policy and evaluation methods. The primary purpose of the PES is to support the centralized selection, promotion and retention of the most qualified Marines of the Active and Reserve Components. The PES also aids in the assignment of personnel and supports other personnel management decisions as required. The new PES replaces two legacy systems previously used to support the old PES. The new PES is being developed under a Preplanned Product Improvement (P3I) Acquisition Strategy. Initial Operational Capability (IOC) is being completed in</p>										

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology	C2906 Marine Corps Information Technology DEV/MOD
<p>U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 ACCOMPLISHMENTS: NOT APPLICABLE.</p> <p>2. FY 2001 PLANS:</p> <ul style="list-style-type: none"> • (U) \$ 0.172 SDE: Develop and maintain high level implementation for Phase I. • (U) \$ 0.056 SDE: Establish CSSE/SE Data Warehousing. • (U) \$ 0.069 SDE: Isolate CSSE/SE information requirements into executable increments. • (U) \$ 0.030 SDE: Integrate executable increments in FY01 POA&M; • (U) \$ 0.982 SDE: Begin developing C2 data warehousing increments. • (U) \$ 0.310 SDE: Integrate MCDSS (I) into CSSE/SE Data Warehousing implementation. • (U) \$ 0.358 SDE: Begin developing MCDSS (II) Data Warehousing increment. • (U) \$ 0.320 SDE: Integrate COMDAR into CSSE/SE data warehousing implementation. • (U) \$ 0.100 SDE: Explore and evaluate types and uses of various decision support tools • (U) \$ 0.060 SDE: Identify decision support increments to be applied. • (U) \$ 0.015 SDE: Identify buy or build options to support decision support requirements. • (U) \$ 0.310 SDE: Develop/integrate decision support tools for defined increments. • (U) \$ 0.280 AIT: Begin software development to ensure technology requirements are realized to support the Marine Corps logistics processes. • (U) \$ 3.629 TFSMS: Begin initial development of TFSMS to include refinement of the system's technical and software architectures, developing and documenting the software, developing user manuals, training, interfaces, peer reviews and inspections, software testing, and software transition plan development. This effort will ultimately result in consolidated management of Tables of Organization (T/O) and Tables of Equipment (T/E) via a single system, allowing coordination of manpower and material solutions in a requirements-based Marine Corps. • (U) \$ 0.079 SBIR: Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. <p>(U) Total \$ 6.770</p> <p>3. FY 2002 PLANS:</p> <ul style="list-style-type: none"> • (U) \$ 0.608 SDE: Program support for configuration control board, system integration, integrated process team, and strategic plan update. • (U) \$ 0.225 SDE: Develop incremental business implementation plan. • (U) \$ 0.500 SDE: Assist data collection for incremental systems. • (U) \$ 0.144 SDE: Analyze legacy information systems for incremental structure. • (U) \$ 0.108 SDE: Decompose legacy information systems for incremental structure. • (U) \$ 0.150 SDE: Begin site survey. • (U) \$ 0.230 SDE: Perform technical architecture assessment. • (U) \$ 0.250 SDE: Register legacy IS in META-DATA repository. 		

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Exhibit R-2a, RDT&E, N Project Justification

(Exhibit R-2a, page 2 of 6)

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EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology	C2906 Marine Corps Information Technology DEV/MOD	
<ul style="list-style-type: none">• (U) \$ 0.180 SDE: Integrate legacy META-DATA into common data architecture.• (U) \$ 0.108 SDE: Update CSSE data architecture• (U) \$ 0.108 SDE: Design target interface to include data transformation rules.• (U) \$ 0.360 SDE: Design target data mart decision support applications.• (U) \$ 0.180 SDE: Design target data warehouse database modifications.• (U) \$ 0.108 SDE: Implement data warehouse increment into target environment.• (U) \$ 0.432 SDE: Develop and install necessary gateways.• (U) \$ 0.108 SDE: Incorporate the legacy database increment.• (U) \$ 0.360 SDE: Implement data mart decision support applications.• (U) \$ 0.162 SDE: Initiate the legacy interfaces.• (U) \$ 0.090 SDE: Implement data warehouse data mart increment.• (U) \$ 0.424 SDE: Hardware business strategy analysis.• (U) \$ 0.020 SDE: COTS migration tools/licenses.• (U) \$ 0.298 AIT: Continue developing software with AIT capabilities in conjunction with the DOD AIT implementation plan.• (U) \$ 0.450 TFAS: Begin incorporating requirements for developing software tasks and integrating software changes into existing system.• (U) \$ 0.152 TFAS: Program Management Support.• (U) \$ 0.200 TFAS: Begin developmental study of user requirements for operating system.• (U) \$ 0.100 TFAS: Begin testing for implementation into the existing system.• (U) \$ 2.894 TFSMS: Continue the development of TFSMS to include refinement of the system's technical and software architectures, developing and documenting the software, developing user manuals and training, interfaces, peer reviews and inspections, software testing, and software transition plan development. This effort will ultimately result in consolidated management of Tables of Organization (T/O) and Tables of Equipment (T/E) via a single system, allowing coordination of• (U) \$ 0.844 SELMS: Begin and complete development of web server migration, DIMHRS interface and TFAS interface development to add user functions to UD/MIPS SELMS module.• (U) \$ 1.238 PES: Begin and complete development of electronic signature capability and development of a web-based applications. Begin development of the software to maintain consistency with security practices and policies			
(U) Total \$	11.031		

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EXHIBIT R-2a, RDT&E Project Justification						DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME						
RDT&E, N /BA 5 Eng & Mfg Development	060513M Marine Corps Information Technology			C2906 Marine Corps Information Technology DEV/MOD						
	FY2000	FY2001	FY2002							
(U) FY 2001 President's Budget:	0.000	6.833	10.290							
(U) Adjustments from the President's Budget:										
(U) SBIR/STTR Transfer										
(U) Execution Adjustment										
(U) Minor Affordability Adjustment		-0.063								
(U) Program Adjustment			0.741							
(U) FY 2002 President's Budget:	0.000	6.770	11.031							
CHANGE SUMMARY EXPLANATION:										
(U) Funding: See Above.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
(U) PMC BLI # 464100 AIT	1419	1895	0	0	0	0	0	0	0	Cont.
(U) PMC BLI# 464100 MAGTF LOG AIS	2027	2195	2276	0	0	0	0	0	0	Cont.
(U) PMC BLI#464100 TFSMS	0	0	404	0	0	0	0	0	0	Cont.
(U) Related RDT&E: Not Applicable.										
(U) D. ACQUISITION STRATEGY:										
TFAS: Program received a MS A decision last year and has completed the Concept Exploration phase consisting of Analysis of Alternatives and industry concept studies. These activities were conducted with start up funds provided by the functional, M&RA.										
Based on these studies TFAS is currently refining its acquisition strategy and documentation in order to develop a MS B decision brief for 4th Qtr 2001. This decision will allow for TFAS system design and development starting in FY02.										
In keeping with Clinger-Cohen Act TFAS strategy will design to the first Basic Capability Package addressed with an anticipated fielding of this package in early FY03. Remaining Capability Packages will begin system design concurrently with the initial package and developed as block upgrades to the TFAS program in the FYDP.										
SELMS: In accordance with the Clinger-Cohen Act a Business Process Review for the SELMS program was conducted and it was determined that SELMS functionality should be included in the UD/MIPS program. While this did not decrease the funding requirement it decreased the requirement to maintain two different programs with two different contractors; therefore providing future cost savings in FY04 once SELMS is fully integrated within the UD/MIPS program. Current development and design is conducted concurrently with UD/MIPS and MCTFS program software releases. As such the funds previously POM'd for SELMS have been added to the MCTFS Program funding line.										
SDE - MS 0 was approved September 2000. The Shared Data Environment uses an evolutionary approach to development. Individual components will be ordered and implemented. The SDE program will use a lead integrator and up to three other vendors to supply discreet components. The contracts will be competitively awarded through GSA schedules. The contract will be for a base period with options for four additional years										
(U) E. SCHEDULE PROFILE: Not Applicable.										

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Exhibit R-3 Cost Analysis								DATE:				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME					
RDT&E, N /BA 5 Eng & Mfg Development			0605013M Marine Corps Information Technology				C2906 Marine Corps Information Technology DEV/MOD					
(Tailor to WBS, or System/Item Requirements)	Method & Type	Activity & Location	PY s Cost	FY 00 Cost	Award Date	FY 01 Cost	Award Date	FY 02 Cost	Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
SDE	FFP/O	MCSC, Quantico, VA				1.788	01/01			Continuing	Continuing	
SDE	TBD	TBD						4.247	01/02	Continuing	Continuing	
AIT	WR	SPAWAR, Chesapeake, VA				0.280	12/00	0.298		Continuing	Continuing	
PES	TBD	CSC, Dumfries, VA						1.238	01/02	Continuing	Continuing	
SELMS	TBD	TBD						0.844	01/02	Continuing	Continuing	
TFSMS	TBD	TBD				3.629	12/01	2.894		Continuing	Continuing	
TFAS	TBD	TBD						0.652	01/02		0.652	
SBIR						0.079					0.079	
Subtotal Product Development			0.000	0.000		5.776		10.173		0.000	15.949	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Development Support Equipment											0.000	
Software Development											0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
SDE	FFP	MCSC, Quantico, VA				0.994	01/01			Continuing	Continuing	
SDE	TBD	TBD						0.608	01/02	Continuing	Continuing	
											0.000	
Subtotal Support			0.000	0.000		0.994		0.608		Continuing	Continuing	
Remarks:												

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CLASSIFICATION:

Exhibit R-3 Cost Analysis								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /BA 5 Eng & Mfg Development			PROGRAM ELEMENT 0605013M Marine Corps Information Technology				PROJECT NUMBER AND NAME C2906 Marine Corps Information Technology DEV/MOD					
(Tailor to WBS, or System/Item Requirements)	Method & Type	Activity & Location	PY s Cost	FY 00 Cost	Award Date	FY 01 Cost	Award Date	FY 02 Cost	Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
TFAS	TBD	TBD						0.100	12/01			
Subtotal T&E			0.000	0.000		0.000		0.100		0.000	0.100	
Remarks:												
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
TFAS	TBD	TBD						0.150	01/02			
Subtotal Management			0.000	0.000		0.000		0.150		0.000	0.150	
Remarks:												
Total Cost				0.000		6.770		11.031		Continuing	Continuing	

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY					R-1 ITEM NOMENCLATURE NAVY INFO TECH DEV/MOD 0605013N						
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		0.000	32.159	49.332	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
AAUSN IT 52901		0.000	2.618	3.216	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
SPAWAR IT 62907		0.000	17.622	8.203	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
BUPERS IT L2905		0.000	5.370	12.389	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
NAVSEA IT S2904		0.000	5.171	5.415	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
NAVAIR IT W2903		0.000	1.378	4.109	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
NAVSUP IT T3005/T3038		0.000	0.000	16.000	0.000	0.000	0.000	0.000	0.000	CONT.	CONT.
A. (U) Mission Description and Budget Item Justification <u>PROJECT 52901</u> - This RDT&E Project funding is, in part, for contract labor support to enhance Standard Labor Distribution Collection and Data Application (SLDCADA) to encompass the Time and Attendance requirements of aviation depots and shipyards and for the Navy Facilities Asset Data Base (NFADB). <u>PROJECT 62907</u> - This project will provide an automated information system to track, record, report, and manage aircraft Flight Hour Program (FHP) obligations by aircraft Type/Model/Series. The program will track and identify obligations reported in relation to the FHP. Includes web enabling efforts. <u>PROJECT I2905</u> - Personalized Recruiting for Immediate and Delayed Enlistment (PRIDE) system is an interactive, on-line application that provides the Navy with an orderly and efficient mechanism for channeling accessions into required skill areas and controlling the reservation process. Each day PRIDE supports over 400 users in 71 geographical locations and is critical to fleet readiness. <u>PROJECT S2904</u> - This project consists of funding for Information Technology (IT) support at NAVSEA Headquarters (HQ). It includes modifications/enhancements to IT systems within Headquarters such as: Ships Configuration Logistics Support Information Systems (SCLSIS), Command Document Management System (CDMS) and Integrated Class Maintenance Plans (ICMP). This funding also supports modification to existing software, hardware changes, contractual program management and technical support to modify/enhance the NAVSEA HQ systems and infrastructure. The NAVSEA HQ network infrastructure architecture requires the development, analysis and testing of IT prototypes, such as Remote Access, Data Management and Voice over IP. Also supported is software development and upgrades for IT systems and infrastructure, to include COTS software packages/systems; developmental testing and initial operational test and evaluation required prior to system acceptance/approval. <u>PROJECT W2903</u> - Naval Aviation Logistics Data Analysis Integrated Data Environment (NALDA IDE) provides a central Navy aviation logistics database and Management Information System (MIS) compliant with Computer Aided Logistics Support (CALS) and Defense Information Infrastructure Common Operating Environment (DIICOE) for making improved decisions affecting aircraft logistics acquisition, readiness, safety, configuration management, and logistics/engineering support for the CNO Air Warfare Division. The Office of the Secretary of Defense (OSD) has certified NALDA as the central Naval aviation upline Integrated Logistics Support (ILS) data system. This project also includes the Configuration Management Information System is DoD's standard software system for complete and integrated configuration management of weapon systems from acquisition to disposal. <u>PROJECT T3005</u> - National Defense Warehouse. <u>PROJECT T3038</u> - E-Business											

R-1 SHOPPING LIST - Item No. 147 - 1 of 147 - 35

Exhibit R-2, RDT&E Budget Item Justification

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: June 2001	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY		NAVY INFO TECH DEV/MOD 0605013N	
	BA-5		
B. (U) Program Change Summary	FY 2000	FY 2001	FY 2002
FY 2001 President's Budget:	0.000	15.259	6.926
Appropriated Value:	0.000	29.259	
Adjustment to FY 2000/2001 Apprriated Value/	0.000	2.900	37.052
FY 2001 Prtesident's Budget	0.000	32.159	43.978
Funding: Not Applicable			
FY00: N/A			
FY01: (9.000) Human Resources Enterprise Strategy; (5.000) Distance Learning IT Center; (3.200) Defense Productivity Software Initiative; (-.300) minor adjustments (-.300) minor adjustments			
FY02: New Order Writing System (2.297); EMPRESS (5.372); NRAMS (7.000); E-Business (15,000); (1.812) paperless acquisition; Clean financial statements (2.399); and other adustments (3.172).			
Schedule: Not Applicable			
Technical Not Applicable			

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EXHIBIT R-2a, RDT&E Project Justification							DATE: <div>June 2001</div>				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, N BA-5		NAVY INFO TECH DEV/MOD 0605013N			AAUSN IT 52901						
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.000	2.618	3.216	1.380	1.384	1.387	1.392	1.395	1.000	13.772
RDT&E Articles Qty											

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This RDT&E Project funding is, in part, for contract labor support to enhance Standard Labor Distribution Collection and Data Application (SLDCADA) to encompass the Time and Attendance requirements of aviation depots and shipyards. SLDCADA was selected in April 1999 to be deployed as the Department of Navy standard time and attendance system. SLDCADA met 86% of all Departmental claimancy requirements, was Y2K compliant, had Common Operating Environment (COE) certification and interfaced with all of the legacy payroll and financial management systems. SLDCADA is planned to be fully modified and deployed by the end of FY01 and will satisfy the requirements of Clean Financial Statement.

In 1997 a Deputy Secretary of Defense directive was issued calling for paper-free acquisition processes by 1 January 2000. While the Navy has made significant strides toward this goal, additional capabilities are required. The ASN(RD&A) established the PEO for Acquisition Related Business Systems (ARBS) to manage this major initiative within the DON. While individual claimants are self-financing their specific commands' paper free initiatives, this funding will be used by the PEO office for "Enterprise" (i.e., Navy-wide) paper free programs.

In addition, NFADB funds are necessary to support software modifications to bring DON standard systems into compliance with federal accounting standards in accordance with the Federal Financial Management Improvement Act of 1996 and the Chief Financial Officer's Act of 1990.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS: NOT APPLICABLE.

2. FY 2001 PLAN:

(U) (\$2.624) Complete modification of SLDCADA to support shipyard, aviation depot and other non-standard labor cost distribution requirements for time and attendance. Complete deployment Navywide including Phase II to non-shipyard/depot industrial activities and Phase III implementation at the shipyards and MarCorps and Navy depots.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001																																																				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N			PROJECT NAME AND NUMBER AAUSN IT 52901																																																						
(U) PROGRAM CHANGE SUMMARY		<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	-																																																						
FY 2001 President's Budget:				2.642	0.000																																																						
Adjustment from FY 01 President's Budget:				-0.024	3.216																																																						
FY 2002 DON Budget:				2.618	3.216																																																						
CHANGE SUMMARY EXPLANATION:																																																											
(U) FUNDING: FY 2001 adjustment is a .7% Pro-Rata reduction pursuant to Section 8086 -.018; other minor adjustment -.006.																																																											
(U) SCHEDULE: NOT APPLICABLE.																																																											
(U) TECHNICAL: NOT APPLICABLE.																																																											
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 30%;">B. OTHER PROGRAM FUNDING SUMMARY</th> <th style="text-align: right; width: 8%;">FY 2000</th> <th style="text-align: right; width: 8%;">FY 2001</th> <th style="text-align: right; width: 8%;">FY 2002</th> <th style="text-align: right; width: 8%;">FY 2003</th> <th style="text-align: right; width: 8%;">FY 2004</th> <th style="text-align: right; width: 8%;">FY 2005</th> <th style="text-align: right; width: 8%;">FY 2006</th> <th style="text-align: right; width: 8%;">Cost to Complete</th> <th style="text-align: right; width: 8%;">Total</th> </tr> </thead> <tbody> <tr> <td>O&M,N Acq and Prog Mgmt (4B3N)</td> <td style="text-align: right;">13.884</td> <td style="text-align: right;">11.065</td> <td style="text-align: right;">9.623</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">34.572</td> </tr> <tr> <td>O&M,N Civ Manpower & Prog Mgmt (4A3M)</td> <td style="text-align: right;">5.600</td> <td style="text-align: right;">7.137</td> <td style="text-align: right;">5.746</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">18.483</td> </tr> <tr> <td>O&M,MC (reimbursable)</td> <td style="text-align: right;">1.200</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">1.200</td> </tr> <tr> <td>OP, N BA-7 Command Supt Equip BLI 810600</td> <td style="text-align: right;">10.185</td> <td style="text-align: right;">1.939</td> <td style="text-align: right;">1.150</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">.000</td> <td style="text-align: right;">13.274</td> </tr> </tbody> </table>										B. OTHER PROGRAM FUNDING SUMMARY	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Cost to Complete	Total	O&M,N Acq and Prog Mgmt (4B3N)	13.884	11.065	9.623	0.000	0.000	0.000	0.000	.000	34.572	O&M,N Civ Manpower & Prog Mgmt (4A3M)	5.600	7.137	5.746	0.000	0.000	0.000	0.000	.000	18.483	O&M,MC (reimbursable)	1.200	.000	.000	.000	.000	.000	.000	.000	1.200	OP, N BA-7 Command Supt Equip BLI 810600	10.185	1.939	1.150	0.000	0.000	0.000	.000	.000	13.274
B. OTHER PROGRAM FUNDING SUMMARY	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Cost to Complete	Total																																																		
O&M,N Acq and Prog Mgmt (4B3N)	13.884	11.065	9.623	0.000	0.000	0.000	0.000	.000	34.572																																																		
O&M,N Civ Manpower & Prog Mgmt (4A3M)	5.600	7.137	5.746	0.000	0.000	0.000	0.000	.000	18.483																																																		
O&M,MC (reimbursable)	1.200	.000	.000	.000	.000	.000	.000	.000	1.200																																																		
OP, N BA-7 Command Supt Equip BLI 810600	10.185	1.939	1.150	0.000	0.000	0.000	.000	.000	13.274																																																		
<p>C. ACQUISITION STRATEGY:</p> <p>Hardware (Sun 6500 series servers) and COTS (Oracle 8i) licenses will be procured using GSA competitive bids referenced in existing Blanket Purchase Agreements (BPAs). Contract labor for requirements definition, design, programming, testing, training development, data base conversion and load, training development and delivery, equipment installation, systems deployment and operations will be procured off existing BPAs.</p> <p>D. SCHEDULE PROFILE: UNDER DEVELOPMENT.</p>																																																											

R-1 SHOPPING LIST - Item No. 131 - 4 of 131 - 22

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 22)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA-5			NAVY INFO TECH DEV/MOD 0605013N			AAUSN IT 52901						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Electronic Document Access	GSA	KPMG, Wash DC	0.000	1.383	10/00	1.817		1.372		3.000	7.572	
Ancillary Hardware Development											0.000	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	1.383		1.817		1.372		3.000	7.572	
Remarks:												
Development Support Equipment											0.000	
Software Development	IDIQ	HROC, Wash, DC	0.000	0.842	10/00	1.399		0.000		0.000	2.241	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.842		1.399		0.000		0.000	2.241	
Remarks:												

R-1 SHOPPING LIST - Item No. 131 - 5 of 131 - 22

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 22)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5			PROGRAM ELEMENT NAVY INFO TECH DEV/MOD 0605013N			PROJECT NAME AND NUMBER AAUSN IT 52901						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	RNTFRW	NAVFACIT, Pt hueneme, CA		0.393	10/00						0.393	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.393		0.000		0.000		0.000	0.393	
Remarks:												
Total Cost				2.618		3.216				0.000	10.207	
Remarks:												

R-1 SHOPPING LIST - Item No. 131 - 6 of 131 - 22

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 22)

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification						DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER						
RDT&E, N BA 5	Navy Information Technology Dev/Mod 0605013N				SPAWAR IT 62907						
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost*		0.000	17.622	8.203	0.000	0.000	0.000	0.000	0.000	0.000	25.825
RDT&E Articles Qty		N/A	N/A	N/A	N/A	N/A	N/A			N/A	

NOTE: These efforts were funded in FY00 and prior with O&M,NR fund.

FY01 Project cost includes Congressional add for Human Resource Enterprise Strategy (\$9M); Distance Learning IT Center at California State University (\$5M); and Defense Productivity Software Initiative (\$3.2M). Efforts also support Vice Chief of Naval Operations initiative directing all programs to move rapidly to a web-enabled environment. Web-enabling the NTCSS applications will allow afloat and ashore users to access the applications from any workstation with a web browser. This provides the foundation for synchronized data replication allowing labor intensive tasks to be moved ashore from ships and expeditionary units.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

FORECAST: An automated information system to track, record, report, and manage aircraft Flight Hour Program (FHP) obligations by aircraft Type/Model/Series. The program will track and identify obligations reported in relation to the FHP.

CVAOS: A web enabled software program that will access a database that contains information about Selected Reserve CV Augment Units manpower

JALIS: This system provides an airlift data collection and analysis system for the purpose of airlift and aircraft management. JALIS supports the objectives and strategies presented in the DoD Transportation Corporate Information Management (CIM) Strategic Plan and Enterprise Integration (EI) Implementation Strategy as directed for DoD transportation management responsibilities in the USTRANSCOM Joint transportation CIM Center (JTCC) Abbreviated Integration Decision Paper (IDP) for the JALIS.

NOW: This system will improve Reserve retention due to timely receipt of orders and travel arrangements. System will improve orderwriting capability for ADSW and PSRC recall for unified and Fleet CINCSs and speed of

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 PLAN: NOT APPLICABLE

2. FY 2001 PLAN: FORECAST will develop an automated information system to track, record, report, and manage aircraft Flight Hour Program (FHP) obligations by aircraft Type/Model/Series. The program will track and identify obligations reported in relation to the FHP.

CVAOS will develop a web enabled software program that will access a database that contains information about Selected Reserve CV Augment Units manpower

JALIS will provide an airlift data collection and analysis system for the purpose of airlift and aircraft management. JALIS supports the objectives and strategies presented in the DoD Transportation Corporate Information Management (CIM) Strategic Plan and Enterprise Integration (EI) Implementation Strategy as directed for DoD transportation management responsibilities in the USTRANSCOM Joint transportation CIM Center (JTCC) Abbreviated Integration Decision Paper (IDP) for the JALIS.

NOW will develop a new order writing system to improve Reserve retention due to timely receipt of orders and travel arrangements. System will improve order writing capability for ADSW and PSRC recall for unified and Fleet CINCSs and speed of Reservist response.

3. FY 2002 PLAN: NOW design, development and testing will continue. This system will provide users and managers with total force readiness and availability for operational planning by providing the means to approve, track and manage order writing more effectively.

JALIS WEB-enabling development to continue. This development effort includes requirements determination support, system analysis, database design, system software development and testing of the system. The JALIS system development will automatically schedule flights on the basis of on-demand requests, priority factors, aircraft availability and other applicable business rules. JALIS supports the Flight Hour Program.

Design develop, and test web front end for all NTCSS applications.

(U) PROGRAM CHANGE SUMMARY

FY2001: Section 8086 .7% Pro-rata Reduction (-\$124K), Government-Wide Recission: PL 106-554, Sec.1403 (-\$38K).

R-1 SHOPPING LIST - ITEM NO. 143

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 1 of 3)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)									DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA 5			NSIPS 0605013N			SPAWAR 62907						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Development Support Equipment											0.000	
Software Development				0.579		2.849					0.000	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.579		2.849		0.000		0.000	0.000	
Remarks: FY01 Congressional Add funding not included on the R-3.												

R-1 SHOPPING LIST - Item No. 143

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 2 of 3)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT 0605013N			PROJECT NAME AND NUMBER						
RDT&E, N			NSIPS Dev/Mod			SPAWAR 62907						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.580		0.000		0.000		CONT	CONT	
FY01 Total does not include Congressional Add funding.												
Remarks:												

R-1 SHOPPING LIST - Item No.143

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 3 of 3)

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CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N BA-5		NAVY INFO TECH DEV/MOD 0605013N				BUPERS IT EMPRS - L2905					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.000	0.000	5.389	15.345	22.527	9.664	1.632	1.648		56.205
RDT&E Articles Qty											

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Electronic Military Personnel Records System (EMPRS) is not a new start. These funds were moved from O&M,N to RDT&E,N due to Congressional (HAC) direction and subsequent OUSD(C) guidance to adjust IT budgeting. EMPRS system is an electronic document/imagebased system that serves as the repository for all DON official military personnel record images. It supports retired, active, and reserve components of military personnel in the functional areas of selection board operations, casualty assistance, mobilization, and other military personnel records management functions. In 1995, due to various factors, such as obsolete technology and increased demand, a critical need existed to provide a personnel record system having greater capacity, reliability, efficiency, flexibility, responsiveness, and functionality at lower cost than was achievable with the existing Military Personnel Records System (MPRS). An Optical Imaging System was determined to be the best choice to replace the old microfiche based system. Navy Personnel Command (NPC) designated the Defense Personnel Records Imaging System (DPRIS)-EMPRS as the solution to this operational deficiency. When DPRIS-EMPRS was approved to proceed in 1995, the development resources were procured by awarding two Firm Fixed Price (FFP) contracts to one contractor for system development and conversion. Upon completion of the conversion contract in 1998, a production and computer operations support contract with the same contractor was started. Because the MPRS system equipment was fragile, and obsolete, MPRS was replaced during the BRAC-93 mandated move from Washington, DC with DPRIS-EMPRS. DPRIS-EMPRS moved from a development to a production system in 4th quarter FY-98, prior to Milestone III approval. Although DPRIS-EMPRS is operational, it is also still in a developmental environment and portions of the OM&N funding must be reappropriated as RDT&E throughout the FYDP.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS: NOT APPLICABLE.
2. FY 2001 PLAN: NOT APPLICABLE.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDTE, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N				PROJECT NAME AND NUMBER BUPERS IT EMPRS - L2905				
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	0.000	5.389	15.345	22.527	9.664	1.632	1.648		56.205
RDTE Articles Qty										
<p>3. FY 2002 PLAN:</p> <p>A.</p> <p>(U) (\$50) Program Management Office travel associated with stabilization of current system and re-engineering of new system.</p> <p>(U) (\$45) Purchase of hardware equipment for the technical refreshment of the development, test, and evaluation environment.</p> <p>(U) (\$3,694) Program Management Office and development contract services to support stabilization of current system, development of software and hardware system interface between D EMPRS and OSD activities, and NAVFIT initiative (interface NAVFIT with DPRIS-EMPRS).</p> <p>(U) (\$1,600) Program Management Office and development contract services to support re-engineering processes (business analysis, R&D, business design, development, testing, programming, and documentation).</p>										

R-1 SHOPPING LIST - Item No. 131 - 3 of 131 - 22

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 3 of 22)

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EXHIBIT R-2a, RDT&E Project Justification						DATE:		June 2001	
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER			
RDT&E, N BA-5			NAVY INFO TECH DEV/MOD 0605013N			BUPERS IT EMPRS - L2905			

B. (U) Program change Summary:

	FY 2000	FY 2001	FY 2002
FY 2001 President's Budget:	0.000	0.000	0.000
Appropriated Value:			
Adjustment to FY 2000/2001 Appropriated Value/			3.772
FY 2001 President's Budget:			
50640 Final POM02 Balance			-0.005
67521 EMPRS			1.600
68934, 68948, 68968 Across the Board			0.022
FY 2002/2003 President's Budget:	0	0	5.389

(U) SCHEDULE: NOT APPLICABLE.

(U) TECHNICAL: NOT APPLICABLE.

B. OTHER PROGRAM FUNDING SUMMARY	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Total
O&M,N	11.041	12.580	10.032	0.000	0.000	0.000	0.000	33.653
OPN			5.217	0.000	0.000	0.000	0.000	5.217

C. ACQUISITION STRATEGY:

Hardware (Servers, Raid, Jukeboxes, workstations), COTS licenses and contract labor for Program Management Office, Development Office (design, programming, testing configuration management), and IT Computer Support Office (equipment installation and system deployment) will be procured using GSA competitive bids.

R-1 SHOPPING LIST - Item No. 131 - 4 of 131 - 22

Exhibit R-2a, RDT&E Project Justification
 (Exhibit R-2a, page 4 of 22)

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Exhibit R-3 Cost Analysis (page 2)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N BA-5			NAVY INFO TECH DEV/MOD 0605013N			BUPERS IT EMPRS - L2905						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	NPC Millington				0.067	1-Oct-01	10.546			10.613	
Systems Engineering	TBD	GSA Contractor/NPC Millington				1.720	1-Oct-01	1.440			3.160	
Tooling												
GFE												
Subtotal T&E			0.000	0.000		1.787		11.986			13.773	
Remarks:												
Software Development	TBD	GSA Contractor/NPC Millington				1.310	1-Oct-01	1.920			3.230	
Integrated Logistics Support	TBD	GSA Contractor/NPC Millington				1.272	1-Oct-01	0.720			1.992	
Configuration Management	TBD	GSA Contractor/NPC Millington				1.020	1-Oct-01	0.719			1.739	
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	0.000		3.602		3.359			6.961	
Total Cost				0.000		5.389		15.345			20.734	
Remarks:												

R-1 SHOPPING LIST - Item No. 131 - 6 of 131 - 22

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 6 of 22)

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N BA-5		NAVY INFO TECH DEV/MOD 0605013N				BUPERS IT PRIDE/NRAMS - L2905					
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost			5.370	7.000							12.370
RDT&E Articles Qty											

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:. Currently Navy Recruiting is supported by a variety of Information Systems Technologies, many of which are over 20 years old. The three primary systems used for classification are PRIDE, PORT, and RDS. These three are a series of programs written in Fortran and Cobol, which operate off of a mainframe in Mechanicsburg, PA. The data structures involved are difficult for users to work with and the support for the systems is dwindling as they age.

In order to do data analysis, Navy Recruiting personnel are forced to download information into spreadsheets and other PC based databases in order to manipulate the data to provide reports and goaling trends.

Field recruiters use two varieties of contact management programs, RTools and OTools for enlisted and officer recruiters respectively. These programs do not share data with one another, nor do they interface with the classification programs. Further, the classification programs do not interface with the Military Entrance Processing Command (MEPCOM) MEPCOM Integrated Resource System (MIRS), which means that data for recruiters must be reentered manually at least three times.

The goal in the development of NRAMS (Navy Recruiting and Accessions Management System) is to create a single logical system for recruiting. This system will allow both officer and enlisted recruiters to view and manipulate data on potential recruits. Classifiers can use the same program to view and manipulate the same data and classify individuals into Navy fields. This same data will then be transferred electronically into the MIRS system at MEPCOM. At Recruiting Headquarters, analysts will be able to build reports and analyze data from the same system in use by field personnel. This single system will save man-hours in data reentry and transfer as well as provide more accurate and real-time information. It will also enable future improvements such as merging of the recruiter/classifier and the officer/enlisted recruiting roles.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS: NOT APPLICABLE.

2. FY 2001 PLAN:

(U) (\$600) Completed initial down-select process, identifying 4 vendors to complete operational prototypes for evaluation in the final selection process.

(\$4,770) Conducting the final Source Selection for the NRAMS program. Contract award scheduled for June 2001. Selected vendor will begin development immediately.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N			PROJECT NAME AND NUMBER BUPERS IT PRIDE/NRAMS - L2905					
COST (\$ in Millions)	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	5.370	7.000	0.000	0.000	0.000	0.000	0.000	0.000	12.370
RDT&E Articles Qty										
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>3. FY 2002 PLAN:</p> <p>(U) (\$7,000) Anticipate completion of development of initial module, replacing PRIDE, PORT and RDS in June 20002. Deployment will take 6-9 months to complete.</p>										

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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001																																										
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N			PROJECT NAME AND NUMBER BUPERS IT PRIDE/NRAMS - L2905																																												
<p>B. (U) Program change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: right;">FY 2000</th> <th style="width: 10%; text-align: right;">FY 2001</th> <th style="width: 10%; text-align: right;">FY 2002</th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>FY 2001 President's Budget:</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">5.420</td> <td style="text-align: right;">0.000</td> <td></td> </tr> <tr> <td>Appropriated Value:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Adjustment to FY 2000/2001 Appropriated Value/ FY 2001 President's Budget:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>67563 Funded NRAMS Unfunded</td> <td></td> <td></td> <td style="text-align: right;">7.000</td> <td></td> </tr> <tr> <td>66220 .7% Pro Rata, 68869 Gov Wide Rescission</td> <td></td> <td style="text-align: right;">-0.050</td> <td></td> <td></td> </tr> <tr> <td>FY 2002/2003 President's Budget:</td> <td style="text-align: right;">0</td> <td style="text-align: right;">5.370</td> <td style="text-align: right;">7.000</td> <td></td> </tr> </tbody> </table> <p style="margin-top: 20px;">(U) SCHEDULE: NOT APPLICABLE.</p> <p>(U) TECHNICAL: NOT APPLICABLE.</p>											FY 2000	FY 2001	FY 2002		FY 2001 President's Budget:	0.000	5.420	0.000		Appropriated Value:					Adjustment to FY 2000/2001 Appropriated Value/ FY 2001 President's Budget:					67563 Funded NRAMS Unfunded			7.000		66220 .7% Pro Rata, 68869 Gov Wide Rescission		-0.050			FY 2002/2003 President's Budget:	0	5.370	7.000						
	FY 2000	FY 2001	FY 2002																																														
FY 2001 President's Budget:	0.000	5.420	0.000																																														
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FY 2002/2003 President's Budget:	0	5.370	7.000																																														
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 10%; text-align: right;">FY 2000</th> <th style="width: 10%; text-align: right;">FY 2001</th> <th style="width: 10%; text-align: right;">FY 2002</th> <th style="width: 10%; text-align: right;">FY 2003</th> <th style="width: 10%; text-align: right;">FY 2004</th> <th style="width: 10%; text-align: right;">FY 2005</th> <th style="width: 10%; text-align: right;">FY 2006</th> <th style="width: 10%; text-align: right;">Cost to Complete</th> <th style="width: 10%; text-align: right;">Total</th> </tr> </thead> <tbody> <tr> <td>B. OTHER PROGRAM FUNDING SUMMARY</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 40px;">OPN</td> <td style="text-align: right;">0.477</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">0.477</td> </tr> <tr> <td style="padding-left: 40px;">OMN</td> <td style="text-align: right;">4.636</td> <td style="text-align: right;">1.504</td> <td style="text-align: right;">2.701</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td></td> <td style="text-align: right;">8.841</td> </tr> </tbody> </table> <p style="margin-top: 20px;">C. ACQUISITION STRATEGY:</p> <p style="margin-top: 20px;">D. SCHEDULE PROFILE: UNDER DEVELOPMENT.</p>											FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Cost to Complete	Total	B. OTHER PROGRAM FUNDING SUMMARY										OPN	0.477								0.477	OMN	4.636	1.504	2.701	0.000	0.000	0.000	0.000		8.841
	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	Cost to Complete	Total																																								
B. OTHER PROGRAM FUNDING SUMMARY																																																	
OPN	0.477								0.477																																								
OMN	4.636	1.504	2.701	0.000	0.000	0.000	0.000		8.841																																								

R-1 SHOPPING LIST - Item No. 131 - 4 of 131 - 22

Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, page 4 of 22)

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Exhibit R-3 Cost Analysis (page 1)								DATE:				
APPROPRIATION/BUDGET ACTIVITY								June 2001				
RDT&E, N BA-5			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
			NAVY INFO TECH DEV/MOD 0605013N			BUPERS IT PRIDE/NRAMS - L2905						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Electronic Document Access											0.000	0.000
Ancillary Hardware Development											0.000	0.000
Systems Engineering	TBD	NAVRESO/EO Millington		0.300	TBD	0.370	TBD				0.670	0.670
Licenses											0.000	0.000
Tooling											0.000	0.000
GFE											0.000	0.000
Award Fees											0.000	0.000
Subtotal Product Development			0.000	0.300		0.370		0.000		0.000	0.670	0.670
Remarks:												
Development Support Equipment											0.000	
Software Development	TBD	NAVRESO/EO Millington		4.218	TBD	5.564					9.782	9.782
Training Development	TBD	NAVRESO/EO Millington		0.082	TBD	0.106					0.188	0.188
Integrated Logistics Support	TBD	NAVRESO/EO Millington		0.370	TBD	0.460					0.830	0.830
Configuration Management	TBD	NAVRESO/EO Millington		0.400	TBD	0.500					0.900	0.900
Technical Data											0.000	0.000
GFE											0.000	0.000
Subtotal Support			0.000	5.070		6.630		0.000		0.000	11.700	11.700
Total Cost				5.370		7.000		0.000		0.000	12.370	12.370

Remarks:												
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EXHIBIT R-2a, RDT&E Project Justification							DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD PE: 0605013N			PROJECT NAME AND NUMBER NAVSEA IT DEV/MOD PROJECT S2904						
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.000	5.171	5.415	0.000	0.000	0.000	0.000	0.000	CONT.	NAV
RDT&E Articles Qty											

A. Mission Description and Budget Item Justification: This is not a new start. These funds were moved from O&M,N to RDT&E,N due to Congressional (HAC) direction and subsequent OUSD(C) guidance to adjust Information Technology (IT) budgeting. This program includes the funding for Information Technology (IT) support at NAVSEA HQ. This program includes the funding for Information Technology (IT) support at NAVSEA HQ. This includes modifications/enhancements to IT systems within Headquarters such as Ships Configuration Logistics Support Information Systems (SCLSIS), Command Document Management System (CDMS) and Integrated Class Maintenance Plans (ICMP). This funding also supports modification to existing software, hardware changes, contractual program management and technical support to modify/enhance the NAVSEA HQ systems and infrastructure. The NAVSEA HQ network infrastructure architecture requires the development, analysis and testing of IT prototypes, such as Remote Access, Data Management and Voice over IP. Also supported is software development and upgrades for IT systems and infrastructure, to include COTS software packages/systems; developmental testing and initial operational test and evaluation required prior to system acceptance/approval.

(U) Program Accomplishments and Plans:

(U) FY 2000 Plan:

FY 2001 PLAN:

- (U) \$1.320 Miscellaneous Technical Support - Infrastructure Enhancement
- (U) \$.160 Integration Class Maintenance Plans (ICMP)
- (U) \$.255 Ships Configuration Logistics Support Information Systems (SCLSIS)
- (U) \$2.010 Command Document Management System (CDMS)
- (U) \$1.226 Various Software Development
- (U) \$.200 Software Development Upgrades

R-1 SHOPPING LIST - Item No. 142 - 13 of 142 - 21

Exhibit R-2a, RDT&E Project Justification**UNCLASSIFIED**

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, N	PROGRAM ELEMENT NAME AND NUMBER NAVY INFO TECH DEV/MOD 0605013N	PROJECT NAME AND NUMBER NAVSEA IT DEV/MOD/Project S2904

FY 2002 PLAN

(U) \$1.320 Miscellaneous Technical Support - Infrastructure Enhancement

(U) \$.160 Integration Class Maintenance Plans (ICMP)

(U) \$.255 Ships Configuration Logistics Support Information Systems (SCLISIS)

(U) \$2.047 Command Document Management System (CDMS)

(U) \$1.199 Various Software Development

(U) \$.200 Software Development Upgrades

(U) \$.234 NMCI

(U) PROGRAM CHANGE SUMMARY	<u>FY2000</u>	<u>FY2001</u>	<u>FY2002</u>
FY2001 President's Budget:		-0-	5.219
Appropriated Value:			5.160
Adjustment to FY 2000/2001 Apprriated Value/			.018
PBD 604: NON - PAY Inflation			009
		- .037	- .006
NMCI - REIMBURSABLE FUNDING			.234
FY 2001 Prtesident's Budget		-0-	5.171
			5.415

B. (U) Other Program Funding Summary:
FY 2001 .7% across the board recission (-.037); other ajustment (-.011)
FY 2002: other adjustment (.021) ; NMCI adjustment (.234).

C. (U) Acquisition Strategy: Under Development.

D. (U) Schedule:

R-1 SHOPPING LIST - Item No. 142 - 14 of 142 - 21

Exhibit R-2a, RDT&E Project Justification

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Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, N			0605013N				NAVSEA IT DEV/MOD/Project S2904					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various				0.190		0.190		CONT.	0.380	
Ancillary Hardware Development											0.000	
Systems Engineering											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		0.190		0.190		CONT.	0.380	
Remarks: Various is being used in the Contract Method & Type, plus Performing Activity & Location because of numerous project initiations and implementation.												
Development Support Equipment											0.000	
Software Development	Various	Various				0.578		0.513		CONT.	1.091	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	0.000		0.578		0.513		CONT.	1.091	
Remarks:												

R-1 SHOPPING LIST - Item No. 142 - 15 of 142 - 21

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N			0605013N			NAVSEA IT DEV/MOD/Project S2904						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various				1.372		1.606			CONT.	
Operational Test & Evaluation						0.100		0.100			CONT.	
Tooling												
GFE												
Subtotal T&E			0.000	0.000		1.472		1.706		0.000	CONT.	
Remarks:												
Contractor Engineering Support	C/FP	Various				1.630		1.630			CONT.	
Government Engineering Support												
Program Management Support	C/FP	Various				1.312		1.349			CONT.	
Travel												
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.000	0.000		2.942		2.979		0.000		
Remarks:												
Total Cost						5.182		5.388				
Remarks:												

R-1 SHOPPING LIST - Item No. 142 - 16 of 142 - 21

Exhibit R-3, Project Cost Analysis

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605013N - Navy Information Technology Dev/Mod					PROJECT NUMBER AND NAME W2903 - NAVAIR IT/CMIS IT					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	0.000	0.000	1.378	4.109	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Naval Aviation Logistics Data Analysis Integrated Data Environment (NALDA IDE) provides a central Navy aviation logistics database and Management Information System (MIS compliant with Computer Aided Logistics Support (CALS) and Defense Information Infrastructure Common Operating Environment (DII COE) for making improved decisions affecting aircraft logistics acquisition, readiness, safety, configuration management, and logistics/engineering support for the CNO Air Warfare Division. The Office of the Secretary of Defense (OSD) has certified NALDA as the central Naval Aviation upline Integrated Logistics Support (ILS) data system. NALDA currently provides users with critically needed data access and analysis of maintenance, operations, safety, supportability, and readiness information. Funding is budgeted to support the services of system migration from legacy systems into NALDA IDE, and for development of the NALDA IDE data warehouse.

The Configuration Management Information System (CMIS) Program is DoD's standard software system for complete and integrated configuration management of weapon systems from acquisition to disposal. CMIS provides users with a common database infrastructure to ensure compatibility, quality, and consistency of CM processes and provides configuration managers and analysts the validated CM information necessary for accurate maintenance, spare procurements, reliability and safety analysis, and mission readiness. Funding is budgeted to support the services of rehosting and testing of COTS upgrades to ensure objective performance of CMIS is achieved.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS: Not Applicable

2. FY 2001 PLANS:

(U) (\$1.331) NALDA - System migration from legacy configuration management systems into the DOD Configuration Management Information System (CMIS).

(U) (\$.047) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 68.

3. FY 2002 PLANS:

(U) (\$1.254) NALDA - System migration from legacy configuration management systems into the DOD Configuration Management Information System (CMIS) under Naval Aviation Logistics Data Analysis Integrated Data Environment (NALDA IDE) data warehouse development.

(U) (\$2.855) CMIS - Re-baseline CMIS software to upgrade latest version of Oracle and evolve an open standard based interface to other systems.

R-1 SHOPPING LIST - Item No. 142

UNCLASSIFIED

Exhibit R-2a, RDTE Project Justification
(Exhibit R-2a, page 22 of 35)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: June 2001																
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605013N - Navy Information Technology Dev/Mod	PROJECT NUMBER AND NAME W2903 - NAVAIR IT/CMIS IT																
<p>(U) B. PROGRAM CHANGE SUMMARY:</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">FY2000</th> <th style="text-align: center;">FY2001</th> <th style="text-align: center;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1.394</td> <td style="text-align: center;">1.261</td> </tr> <tr> <td>(U) Adjustments from President's Budget:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">-0.016</td> <td style="text-align: center;">2.848</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1.378</td> <td style="text-align: center;">4.109</td> </tr> </tbody> </table> <p>PROGRAM CHANGE SUMMARY:</p> <p>(U) Funding: FY 2001 net decrease of \$.016 million reflects a decrease of \$.010 million for a Congressional Reduction, a decrease of \$.003 million for reprioritization of requirements within the Navy, and a decrease of \$.003 million for a Congressional Recission. FY 2002 net increase of \$2.848 million reflects a realignment of \$2.870 million from O&M,N, a decrease of \$.029 million for a reprioritization of requirements within the Navy, and an increase of \$.007 million for economic assumptions.</p> <p>(U) Schedule: Not Applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable</p>				FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	0	1.394	1.261	(U) Adjustments from President's Budget:	0	-0.016	2.848	(U) FY 2002 President's Budget Submit:	0	1.378	4.109
	FY2000	FY2001	FY2002															
(U) FY 2001 President's Budget:	0	1.394	1.261															
(U) Adjustments from President's Budget:	0	-0.016	2.848															
(U) FY 2002 President's Budget Submit:	0	1.378	4.109															

R-1 SHOPPING LIST - Item No. 142

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0605013N - Navy Information Technology Dev/Mod	W2903 NAVAIR/CMIS IT	
(U) D. ACQUISITION STRATEGY: Contractor services will be used to perform this work. Legacy configuration management systems will be migrated in CMIS under NALDA IDE in an Oracle environment.			
(U) E. SCHEDULE PROFILE:			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u> <u>TO COMPLETE</u>
<u>NALDA:</u>			
(U) Program Milestones		4-Q/01 - Complete migration of 3 med-large legacy systems to CMIS	4-Q/02 - System migration continues. Data warehouse started.
(U) Engineering Milestones			
(U) T&E Milestones		4-Q/01 - Complete operational evaluation of CMIS after legacy system migrations	4-Q/02 - Complete operational evaluation of CMIS after migrations. Data warehouse evaluation.
(U) Contract Milestones			2-Q/02 Contract Award
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u> <u>TO COMPLETE</u>
<u>CMIS:</u>			
(U) Program Milestones			4-Q/02 - Software Release 5.2.4 - Re-baseline CMIS SW to upgrade latest version of Oracle and evolve an open standard based interface to other systems.
(U) Engineering Milestones			2-Q/02 TRB/CCB/CAT
(U) T&E Milestones			3 & 4-Q/02 TRR/FPT/BETA
(U) Contract Milestones			2-Q/02 Contract Award

R-1 SHOPPING LIST - Item No. 142

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Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 24 of 35)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			Navy Information Technology Dev/Mod 0605013N			PU W2903 NAVAIR/CMIS IT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			To Complete	Total Cost	Target Value of Contract
Subtotal Product Development			0.000	0.000		0.000						
Remarks:												
SW Development (NALDA)	C/CPAF	TBD		1.331	11/00	1.254	11/01			Continuing	Continuing	
SW Development (CMIS)	C/CPAF	TBD				2.855	11/01			Continuing	Continuing	
SBIR Assessment				0.047								
Award Fee (NON ADD) (10%) NALDA *				0.139		0.126						
Award Fee (NON ADD) (10%) CMIS *						0.285						
Subtotal Support			0.000	1.378		4.109				Continuing	Continuing	
Remarks: Funding will be used to migrate legacy configuration management systems into the DOD Configuration Management Information System (CMIS), under NALDA IDE in the Oracle environment, and rehosting and testing of COTS upgrades to ensure objective performance of the CMIS system is achieved.												
* Contract Award Fees range from 3% to 10%. The amount of the Award Fees listed for NALDA and CMIS are included in the SW Development cost amount for each FY for both NALDA and CMIS.												

R-1 SHOPPING LIST - Item No. 142

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 25 of 35)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5 Engineering & Manufacturing						R-1 ITEM NOMENCLATURE 0605013N Navy IT DEV / MOD					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE0605013N Cost		0.000	0.000	16.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
E-Business		0.000	0.000	15.000	0.000	0.000	0.000	0.000	0.000		
Clean Financial Statements		0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000		
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The DoN Electronic Business (eBusiness) Operations Office was established on 1 October 2000 to serve as a catalyst for implementing and integrating DON eBusiness efforts, and harnessing emerging uses of electronic business (both from within the whole of government as well as private industry), and making DON processes more efficient and effective. The Office provides a consistent and integrated management approach and facilitates the evolution to future technological solutions, a center of eBusiness innovation for the Navy and Marine Corps. The DON eBusiness Operations Office, as chartered by the Secretary of the Navy, is responsible for acting as the DON center for innovation as well as managing card programs and selected electronic transaction systems. Office responsibilities include:</p> <ul style="list-style-type: none"> - Act as clearinghouse for eBusiness best business practices and serve as an import/export agent, identifying industry and government innovations and broadcasting them DON-wide. Identify opportunities within DON to implement new eBusiness solutions and facilitate the integration of existing similar eBusiness initiatives. - Provide consulting services for DON organizations implementing eBusiness solutions to include Information Assurance considerations and DON architecture and Interoperability standards. - Support functional business process owners in developing eBusiness Implementation Plans - Develop and administer a process to invest in pilot projects to foster the implementation of innovative eBusiness solutions throughout the Department. - Manage all DON card programs, consolidate where appropriate, and evolve to use of future technological solutions to create efficiency and coordinate with DON customers to improve support from private sector financial institutions. - Develop a comprehensive, outcome based metric collection and management program <p>(U)B. JUSTIFICATION OF BUDGET ACTIVITY: FY 02 E-Business funding was obtained by PBD 426 issued during the FY 02 OSD Budget Review.</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: National Defense Data Warehouse Funds provide for the development of a data warehouse to account/inventory all ships, airplanes, satellites, missiles, etc. ASN(RDA) has oversight, with NAVSUP running the warehouse. Funding is for contractor support, hardware/software, and systems interfaces.</p> <p>(U)B. JUSTIFICATION OF BUDGET ACTIVITY: FY 02 Defense Data Warehouse funding was obtained by Issue 67605 (Clean Financial Statements) during the FY 02 OSD Budget Review.</p>											

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification

UNCLASSIFIED

DATE:	June 2001
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(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 2000 ACCOMPLISHMENTS: Not Applicable

2. FY 2001 PLANS: Not Applicable

3. FY 2002 PLANS: Execute between 30 and 50 pilot projects. Pilot project execution consists principally of proof of concept approach.
- (U) (\$15.000)

4. FY 2003 PLANS: Not Applicable

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 27 of 35)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE:		June 2001																																											
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME																																													
RDT&E, N / BA-5			0605013N Navy IT Dev / Mod			T3038 E-Business																																													
<p>(U) B. PROGRAM CHANGE SUMMARY: (Show total funding, schedule, and technical changes for the program element that have occurred since the last President's submission.</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">FY2000</th> <th style="text-align: center;">FY2001</th> <th style="text-align: center;">FY2002</th> </tr> </thead> <tbody> <tr> <td>(U) FY 2001 President's Budget:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td>(U) Appropriated Value:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td>(U) Adjustments from the FY 2001 President's Budget:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">15000</td> </tr> <tr> <td>(U) FY 2002 President's Budget Submit:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">15000</td> </tr> </tbody> </table> <p>CHANGE SUMMARY EXPLANATION:</p> <p>(U) Funding: FY 02 funding received by PBD 426 during FY 02 OSD Budget.</p> <p>(U) Schedule: Not Applicable</p> <p>(U) Technical: Not Applicable</p> <p>(U) C. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Line Item No. & Name</u></th> <th style="text-align: center;">FY 2000</th> <th style="text-align: center;">FY 2001</th> <th style="text-align: center;">FY 2002</th> <th style="text-align: center;">FY 2003</th> <th style="text-align: center;">FY 2004</th> <th style="text-align: center;">FY 2005</th> <th style="text-align: center;">FY 2006</th> <th style="text-align: center;">FY 2007</th> <th style="text-align: center;">To Complete</th> <th style="text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>Not Applicable</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>											FY2000	FY2001	FY2002	(U) FY 2001 President's Budget:	0	0	0	(U) Appropriated Value:	0	0	0	(U) Adjustments from the FY 2001 President's Budget:	0	0	15000	(U) FY 2002 President's Budget Submit:	0	0	15000	<u>Line Item No. & Name</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	Not Applicable										
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Not Applicable																																																			

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UNCLASSIFIED

Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 28 of 35)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE:																														
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																														
RDTE, N / BA-5	0605013N Navy IT Dev / Mod	T3038 E-Business																														
<p>(U) D. ACQUISITION STRATEGY: * An explanation of acquisition, management, and contracting strategies shall be provided for each project.</p> <p>(U) E. SCHEDULE PROFILE: * Include the program milestone chart that reflects Program Milestones, Engineering Milestones, T&E Milestones, and Contract Milestones for all years of the program, not just through budget years. The chart should display all planned major milestones and test and evaluation events, such as LRIP approval, Milestone III, IOC, Development Test Evaluation, and Operational Test and Evaluation for the total program by quarter showing both beginning and ending times. For non-acquisition programs, meaningful data should be provided.</p> <p>Program managers may choose to provide a milestone chart instead of completing this section. If a milestone chart is submitted, the following criteria must be met:</p> <ol style="list-style-type: none">1. Milestones displayed on the chart must support this budget.2. The chart must be incorporated in this Excel file. <table><thead><tr><th></th><th><u>FY 2000</u></th><th><u>FY 2001</u></th><th><u>FY 2002</u></th><th><u>FY 2003</u></th><th><u>TO COMPLETE</u></th></tr></thead><tbody><tr><td>(U) Program Milestones</td><td></td><td></td><td>TBD</td><td></td><td></td></tr><tr><td>(U) Engineering Milestones</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>(U) T&E Milestones</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>(U) Contract Milestones</td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table> <p>* Not required for Budget Activities 1, 2, 3, and 6.</p>				<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones			TBD			(U) Engineering Milestones						(U) T&E Milestones						(U) Contract Milestones					
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0605013N Navy IT Dev / Mod			PROJECT NUMBER AND NAME T3038 E-Business						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation						15.000					15.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		15.000		0.000		0.000	15.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			#REF!	#REF!		#REF!		#REF!		#REF!	#REF!	
Remarks:												

R-1 SHOPPING LIST - Item No. 78

UNCLASSIFIED

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 30 of 35)

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 05013N Navy IT DevMod				PROJECT NUMBER AND NAME Clean Financial Statements					
COST (\$ in Millions)	Prior Years Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
RDT&E Articles Qty											
(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: National Defense Data Warehouse - Funds provide for the development of a data warehouse to account/inventory all ships, airplanes, satellites, missiles, etc. ASN(RDA) has oversight, with NAVSUP running the warehouse. Funding is for contractor support, hardware/software, and systems interfaces.											
(U) PROGRAM ACCOMPLISHMENTS AND PLANS:											
1. FY 2000 ACCOMPLISHMENTS: Not Applicable											
2. FY 2001 PLANS: Not Applicable											
3. FY 2002 PLANS:											
- (U) (\$1.000) The development of a data warehouse in FY 02.											
4. FY 2003 PLANS: Not Applicable											

R-1 SHOPPING LIST - Item No.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: June 2001																													
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME																													
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R-1 SHOPPING LIST - Item No.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: June 2001																															
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME																																
RDT&E, N / BA-5	05013N Navy IT Dev\Mod	Clean Financial Statements																																
<p>(U) D. ACQUISITION STRATEGY: * An explanation of acquisition, management, and contracting strategies shall be provided for each project.</p> <p>(U) E. SCHEDULE PROFILE: * Include the program milestone chart that reflects Program Milestones, Engineering Milestones, T&E Milestones, and Contract Milestones for all years of the program, not just through budget years. The chart should display all planned major milestones and test and evaluation events, such as LRIP approval, Milestone III, IOC, Development Test Evaluation, and Operational Test and Evaluation for the total program by quarter showing both beginning and ending times. For non-acquisition programs, meaningful data should be provided.</p> <p>Program managers may choose to provide a milestone chart instead of completing this section. If a milestone chart is submitted, the following criteria must be met:</p> <ol style="list-style-type: none">1. Milestones displayed on the chart must support this budget.2. The chart must be incorporated in this Excel file. <table><thead><tr><th></th><th><u>FY 2000</u></th><th><u>FY 2001</u></th><th><u>FY 2002</u></th><th><u>FY 2003</u></th><th><u>TO COMPLETE</u></th></tr></thead><tbody><tr><td>(U) Program Milestones</td><td>Not Applicable</td><td>Not Applicable</td><td>Unknown at this Time</td><td>Not Applicable</td><td></td></tr><tr><td>(U) Engineering Milestones</td><td>Not Applicable</td><td>Not Applicable</td><td>Unknown at this Time</td><td>Not Applicable</td><td></td></tr><tr><td>(U) T&E Milestones</td><td>Not Applicable</td><td>Not Applicable</td><td>Unknown at this Time</td><td>Not Applicable</td><td></td></tr><tr><td>(U) Contract Milestones</td><td>Not Applicable</td><td>Not Applicable</td><td>Unknown at this Time</td><td>Not Applicable</td><td></td></tr></tbody></table> <p>Remarks:</p> <p>* Not required for Budget Activities 1, 2, 3, and 6.</p>						<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>	(U) Program Milestones	Not Applicable	Not Applicable	Unknown at this Time	Not Applicable		(U) Engineering Milestones	Not Applicable	Not Applicable	Unknown at this Time	Not Applicable		(U) T&E Milestones	Not Applicable	Not Applicable	Unknown at this Time	Not Applicable		(U) Contract Milestones	Not Applicable	Not Applicable	Unknown at this Time	Not Applicable	
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>TO COMPLETE</u>																													
(U) Program Milestones	Not Applicable	Not Applicable	Unknown at this Time	Not Applicable																														
(U) Engineering Milestones	Not Applicable	Not Applicable	Unknown at this Time	Not Applicable																														
(U) T&E Milestones	Not Applicable	Not Applicable	Unknown at this Time	Not Applicable																														
(U) Contract Milestones	Not Applicable	Not Applicable	Unknown at this Time	Not Applicable																														

R-1 SHOPPING LIST - Item No.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 05013N Navy IT Dev/Mod			PROJECT NUMBER AND NAME Clean Financial Statements							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development											0.000		
Ancillary Hardware Development											0.000		
Systems Engineering											0.000		
Licenses											0.000		
Tooling											0.000		
GFE											0.000		
Award Fees											0.000		
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000		
Remarks:													
Development Support Equipment											0.000		
Software Development						0.200					0.200		
Training Development											0.000		
Integrated Logistics Support											0.000		
Configuration Management											0.000		
Technical Data											0.000		
GFE											0.000		
Subtotal Support			0.000	0.000		0.200		0.000		0.000	0.200		
Remarks:													

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 05013N Navy IT Dev/Mod			PROJECT NUMBER AND NAME Clean Financial Statements							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation						0.800					0.800		
Operational Test & Evaluation											0.000		
Tooling											0.000		
GFE											0.000		
Subtotal T&E			0.000	0.000		0.800		0.000		0.000	0.800		
Remarks:													
Contractor Engineering Support											0.000		
Government Engineering Support											0.000		
Program Management Support											0.000		
Travel											0.000		
Labor (Research Personnel)											0.000		
Overhead											0.000		
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000		
Remarks:													
Total Cost			#REF!	#REF!		1.000		#REF!		#REF!	#REF!		
Remarks:													

R-1 SHOPPING LIST - Item No.

UNCLASSIFIED

Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N
PROGRAM ELEMENT TITLE: Information Technology Development

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 2000 ACTUAL	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
DIMHRS* X3033	0	0	47,184						Cont.	Cont.

Total

* This project was transferred from PE 0605803S, Defense Human Resources Activity, beginning in FY02.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Defense Military Human Resources System (DIMHRS)(Pers/Pay) will be a single integrated, all Service, all Component military personnel and pay management and information system, supporting the complete military personnel life cycle through the full spectrum of military operations. The core will consist of common functions and appropriate interfaces to support Component/Service-unique functions. Military personnel functions support Active Duty, Retired, and Reserve Component personnel (and their families) throughout their entire military careers. Additionally, these functions support DoD-sponsored personnel during contingency and wartime operations. Individual Service business policies, practices, and processes will be examined and re-engineered, or combined with "best practice" solutions to satisfy DIMHRS (Pers/Pay) core functional requirements. These core functions address the personnel communities' support to: 1) meet the operator's mission requirements across the full spectrum of force mobilization and employment from peacetime to war, and 2) eliminate business policies and practices that create inequities among the Services and complicate processing. These core functions, while macro in nature, will be continuously validated to ensure the Program remains aligned with DoD and Joint warfighting strategies, objectives, and goals.

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N
PROGRAM ELEMENT TITLE: Information Technology Development

1. (U) FY 2000 ACCOMPLISHMENTS: N/A
2. (U) FY 2001 PLAN: N/A

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N
X3033

PROJECT NUMBER:

PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

3. (U) FY 2002 PLAN: (47,184)

- Continue development of critical useful assets
- Finalize all Phase I activities for MAIS ACAT 1AM Program
- Initiate Phase II activities for MAIS ACAT 1AM Program
- Conduct Source Selection activities for program Integration/Development
- Continue R&D activities related to the COTS developmental software
- Obtain Milestone II program approval

B. (U) PROGRAM CHANGE SUMMARY: N/A

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in Thousands)

	<u>FY2000</u> <u>ESTIMATE</u>	<u>FY 2001</u> <u>ESTIMATE</u>	<u>FY 2002</u> <u>ESTIMATE</u>	<u>FY 2003</u> <u>ESTIMATE</u>	<u>FY 2004</u> <u>ESTIMATE</u>	<u>FY 2005</u> <u>ESTIMATE</u>	<u>FY 2006</u> <u>ESTIMATE</u>	<u>FY 2007</u> <u>ESTIMATE</u>	<u>TO</u> <u>COMPLETE</u>	<u>TOTAL</u> <u>PROGRAM</u>
OPN# 2905	0	0	0	0					Cont.	Cont.
O&M,N	0	0	6,900						Cont.	Cont.
OP, DW	0	9,845								
RDT&E, DW	40,920	19,746								
O&M, DW	5,445	6,510								

R-1 Shopping List - Item No Page 148-3 of 148-9

Exhibit R-2,RDT&E Budget Item Justification

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5
X3033

PROGRAM ELEMENT: 0605014N

PROJECT NUMBER:

PROGRAM ELEMENT TITLE: Information Technology Development

PROJECT TITLE: DIMHRS

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Exhibit R-2, FY 2002 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N
X3033

PROJECT NUMBER:

PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

D. (U) ACQUISITION STRATEGY:

	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
Program		MS I	MS II
Milestones		October 00	December 01
Engineering	Sys Rqmts Review	Sys Design Review	
Milestones	September 00	May 01	
T&E			
Milestones			
Contract			
Milestones			

E. (U) SCHEDULE PROFILE:

See paragraph D above.

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Exhibit R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N PROJECT NUMBER: X3033
 PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

A. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 1)										
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0605014N								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prime Mission Product Development										
Prime Mission Product Development										
Government Engineering Support										
Engineering Supt Services										
Engineering Supt Services										
Engineering Supt Services										
Software Development	C/FP	PeopleSoft, Bethesda, MD				11,676	Option	28,000	39,676	39,676
OTHER CONTRACTS										
OTHER ACTIVITIES										
Subtotal Product Development						11,676		28,000	39,676	39,676

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Exhibit R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N PROJECT NUMBER: X3033
 PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

B.(U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 2)										
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0605014N								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	TBD, New Orleans, LA				32,908	Oct 01	TBD	TBD	TBD
Government Engineering Support										
Subtotal Support						32,908				

UNCLASSIFIED

Exhibit R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N PROJECT NUMBER: X3033
 PROGRAM ELEMENT TITLE: Information Technology Development PROJECT TITLE: DIMHRS

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 3)										
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0605014N								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation										
Developmental and Operational Test and Evaluation										
Developmental and Operational Test and Evaluation										
Subtotal T&E										

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Exhibit R-3, FY 2002 RDT&E,N PROJECT COST ANALYSIS

DATE: June 2001

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0605014N

PROJECT NUMBER: X3033

PROGRAM ELEMENT TITLE: Information Technology Development

PROJECT TITLE: DIMHRS

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 4)										
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0605014N								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Booz-Allen & Hamilton, Mclean VA				2,600	Oct 01	TBD	TBD	TBD
Program Management Support										
Program Management Support										
Subtotal Management						2,600				
Total Cost						47,184				

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification						DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER		PROJECT NAME AND NUMBER							
RDT&E, N BA 5		NSIPS Dev/Mod 0508713N		COMNAVRESFOR 62908							
COST (\$ in Millions)		FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		0.000	5.863	13.082						Continuing	Continuing
RDT&E Articles Qty		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
<p>These funds were moved from O&M,NR to RDT&E,N due to Congressional (HAC) direction and subsequent OUSD (C) guidance to adjust IT budgeting</p> <p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The Navy Standard Integrated Personnel System (NSIPS) is an Automated information System (AIS) designed to collect the personnel and pay data for all navy members. NSIPS will be Defense Information Infrastructure Common Operating Environment (DII COE) and year 2000 compliant. It will incorporate the functionality of many Navy Systems into an integrated Navy personnel and pay system for active duty, reserve, and retired personnel. NSIPS will interface with Defense Joint Military Pay System (DJMS) for pay functionality.</p> <p>NSIPS/Electronic Field Service Record (NSIPS/EFSR) POM 02 provided additional funding (\$10.5m in FY 02 and \$4.1m in FY 03) for enhancements and additions for NSIPS/ELECTRONIC FIELD SERVICE RECORD (NSIPS/EFSR): In order to comply with the NSIPS MS III ORD, the NSIPS program must develop and deploy an electronic field service record, that will automate the current paper service record maintenance process and allow commands electronic access to service record data on assigned personnel. This electronic field service record system and concept will be called NSIPS/EFSR.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2000 PLAN: NOT APPLICABLE</p> <p>2. FY 2001 PLAN: (U) (\$5,863) NSIPS will be developing improvements to existing software releases. Releases are designed to improve the overall effectiveness of NSIPS and provide cost savings in other program areas.</p> <p>3. FY 2002 PLAN: (\$2,374) NSIPS will be developing improvements to existing software releases. Releases are designed to improve the overall effectiveness of NSIPS and provide cost savings in other program areas. NSIPS/EFSR (\$10,708) will be interface development/engineering and scanning of current records into the system.</p> <p>(U) B. PROGRAM CHANGE SUMMARY</p> <p>(U) Funding: FY2001 adjustments are due to Section 8086 .7% Pro-rata Reduction (-41) and Government-Wide Rescission (-13).</p>											

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CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)							DATE: June 2001					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
RDT&E, N BA 5			NSIPS 0508713N		NSIPS Dev/Mod 62908							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering						8.500				CONT	CONT	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	0.000		8.500				CONT	CONT	
Remarks:												
Development Support Equipment											0.000	
Software Development				5.863		4.282				CONT	CONT	
Training Development						0.300					0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Remarks:												

R-1 SHOPPING LIST - Item No. 150

Exhibit R-3, Project Cost Analysis

(Exhibit R-3, page 2 of 3)

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT		PROJECT NAME AND NUMBER							
RDT&E, N			NSIPS Dev/Mod		NSIPS Dev/Mod 62908							
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation											0.000	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Subtotal T&E			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			0.000	0.000		0.000				0.000	0.000	
Remarks:												
Total Cost			0.000	8.863		13.082				CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 150

Exhibit R-3, Project Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 3 of 3)

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0605500N MULTI-MISSION MARITIME AIRCRAFT *					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Total PE Cost*	0.000	0.000	0.000	53.804							
H2696 MULTI-MISSION MARITIME AIRCRAFT				53.804							
Quantity of RDT&E Articles	Not Applicable										
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Multi-mission Maritime Aircraft (MMA) program provides the replacement system's for the aging P-3/EP-3 aircraft. The MMA program is intended to meet the Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance Mission Need Statement (MNS) which was validated by the Joint Requirements Oversight Council on 29 FEB 00. The MMA program received Milestone 0 approval to proceed into Concept Exploration (CE) on 22 MAR 2000. New start notification was provided to Congress and concept exploration activities began in June, 2000 under Program Element 0702207N / Project Unit W2737. FY2002 funds Concept and Technology Development phase activities, to include the Component Advanced Development Phase.</p> <p>(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Engineering and Manufacturing Development because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.</p> <p>* This PE is new in FY 2002 and was erroneously left off the R-1 exhibit.</p>											

R-1 SHOPPING LIST - Item No. TBD

UNCLASSIFIED

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0605500N MULTI-MISSION MARITIME AIRCRAFT					PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT					
COST (\$ in Millions)	Prior Year Cost	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Program
Project Cost	0.000	0.000	0.000	53.804							
RDT&E Articles Qty											

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Multi-mission Maritime Aircraft (MMA) program provides the replacement system(s) for the aging P-3/EP-3 aircraft. The MMA program is intended to meet the Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance Mission Need Statement (MNS) which was validated by the Joint Requirements Oversight Council on 29 FEB 00. The MMA program received Milestone 0 approval to proceed into Concept Exploration (CE) on 22 MAR 2000. New start notification was provided to Congress and concept exploration activities began in June, 2000 under Program Element 0702207N / Project Unit W2737. FY2002 funds Concept and Technology Development phase activities, to include the Component Advanced Development Phase.

(U) PROGRAM PLANS:

1. FY 2002 PLANS:

- (U) (\$38.000) Component Advanced Development phase contracts to evaluate MMA system alternative concepts. Scope of effort includes
 - Design MMA alternative concepts' weapon system architectures
 - Conduct technical, logistic, cost, and risk analysis of each proposed MMA alternative concept
 - Apply Modeling & Simulation tools to validate proposed risk mitigations for each MMA alternative concept
 - Evaluate system requirements through cost/performance trade-off analysis
 - Conduct technical and cost analysis of a unmanned air vehicle (UAV) in the maritime role
 - Evaluate a UAV in the maritime role
- (U) (\$ 3.500) Provide engineering and technical support for the Component Advanced Development phase.
- (U) (\$10.304) Provide engineering and technical support for the MS B acquisition documentation, the AoA and the industry Component Advanced Development (CAD) Phase studies.
- (U) (\$ 2.000) Provide management support for the MS B acquisition documentation, the AoA and the industry CAD Phase studies.

R-1 SHOPPING LIST - Item No. TBD

Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 2 of 6)

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Exhibit R-2a, RD TEN Project Justification
(Exhibit R-2a, page 3 of 6)

R-1 SHOPPING LIST - Item No. TBD

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE:
			June 2001
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0605500N MULTI-MISSION MARITIME AIRCRAFT	H2696 MULTI-MISSION MARITIME AIRCRAFT	
(U) D. ACQUISITION STRATEGY: The Multi-Mission Maritime Aircraft (MMA) Milestone 0 was approved 22 March 2000 and the resulting Acquisition Decision Memorandum directed MMA to begin the CE phase consisting of an AoA and industry concept studies. These activities began 3Q/01 and were funded under Program Element 0702207N / Project Unit W2737. In FY2002 a Decision Review will be conducted to gain approval to enter the Component Advanced Development (CAD) Phase. The CAD phase will be a competitive award to multiple contractors to define alternative MMA concept system architectures and evaluate associated risks and proposed mitigations. Selection of MMA concept and approval to enter System Development and Demonstration (SDD) phase will occur at a MS B decision review in FY2003. The MMA program was initiated in response to the JROC validated MNS, "Broad Area Maritime and Littoral Armed Intelligence, Surveillance and Reconnaissance". The Initial Operational Capability is planned for the FY2010-12 time period.			
(U) E. SCHEDULE PROFILE:			
	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>
(U) Program Milestones			Component Advanced Development Phase Decision Review 2Q/02
(U) Engineering Milestones			
(U) T&E Milestones			
(U) Contract Milestones			Component Advanced Development Phase Contract(s) Award 2Q/02

R-1 SHOPPING LIST - Item No. TBD

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: June 2001				
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5			PROGRAM ELEMENT 0605500N MULTI-MISSION MARITIME AIRCRAFT			PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Analysis	C/FFP	Johns Hopkins Univ-APL				3.500	01/02					
MMA CAD	TBD	TBD				38.000	01/02					
Subtotal Product Development			0.000	0.000		41.500						
Remarks:												
Technical Support	C/FP	RBC Inc., VA				0.600	01/02					
Government Engineering Support	WX	NAWCAD, Pax River, MD				9.704	01/02					
Subtotal Support			0.000	0.000		10.304						
Remarks:												

R-1 SHOPPING LIST - Item No. TBD

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 5 of 6)

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: June 2001			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT 0605500N MULTI-MISSION MARITIME AIRCRAFT				PROJECT NUMBER AND NAME H2696 MULTI-MISSION MARITIME AIRCRAFT						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date			Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test & Evaluation	TBD	TBD											
Subtotal T&E			0.000	0.000		0.000							
Remarks:													
Govt Program Mangement Support	WX	NAWCAD, Pax River, MD				2.000	01/02						
Subtotal Management			0.000	0.000		2.000							
Remarks:													
Total Cost			0.000	0.000		53.804							
Remarks:													

R-1 SHOPPING LIST - Item No. TBD

UNCLASSIFIED